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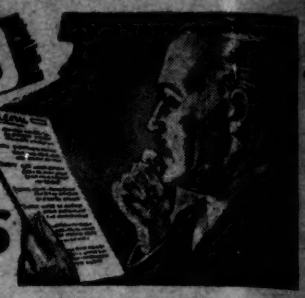

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BRITISH MEDICAL JOURNAL

LONDON SATURDAY SEPTEMBER 22 1945

B.L.A. SURGERY

BY

Brigadier A. E. PORRITT, C.B.E., F.R.C.S.
Consulting Surgeon, 21 Army Group

Brigadier R. K. DEBENHAM, O.B.E., F.R.C.S.
Consulting Surgeon, Second (British) Army

AND

Colonel C. C. ROSS, F.R.C.S.Ed.
Consulting Surgeon, First (Canadian) Army

Just eleven months of war surgery—from the tents and grubby outbuildings of the semi-demolished villas and farmhouses of the Normandy coast to the modern well-equipped German hospitals of the Baltic coast. But what a fascinating series of surgical as well as tactical situations those eleven months produced! For let it be said at the outset that the closer the links between the clinical and administrative sides of a medical organization, the better the results. And the more the administrators keep the clinicians in the tactical picture, the more intelligent and productive becomes the co-operation. Such a happy state of affairs existed and persisted throughout the whole of this campaign; and when to this stimulating atmosphere are added excellent equipment, what can only be called lavish supplies, extremely well organized evacuation, a first-class transfusion and resuscitation service, and a group of young surgeons whose surgical efficiency and clinical common sense were equalled only by their loyalty to a common cause and a common policy, and whose patients were drawn from armies superbly led, with morale and health at their highest pitch, well equipped, well clothed, and well fed—it will be seen that N.W. Europe was indeed the war surgeon's paradise.

Results

To give some idea of what B.L.A. surgeons achieved in the time the following figures are quoted. Realizing that figures are essentially fallacious, we give them only approximately. During the campaign there were 406,000 admissions to medical wards; of these, 258,000 (64%) were treated in the theatre and 148,000 (36%) evacuated to the United Kingdom. Of these evacuations it is worthy of note that over 50% were by air. Of the total admissions 181,700 (45%) were battle casualties. Of these, more than 50,000 received their surgical treatment in forward areas (approximately 28%), two-thirds of this group being serious major wounds. Of the total battle casualties, 39% were evacuated to the U.K., 61% were treated in B.L.A., and only 6.7% died of wounds. One other interesting comparison may be made between this campaign and the last war. In the latter, 41 of every 1,000 troops became a casualty each month (i.e., killed, missing, prisoner, wounded, or died of wounds); in this theatre only 21. It will of course be realized that a surgeon's work in the Army extends considerably beyond the limits of battle casualties alone—accidents and "ordinary" surgical conditions accounting for a very large number of cases. There can be little question, therefore, of the quantity of work done by our 170-odd surgeons; of the quality, an overall recovery rate in an active theatre of war of approximately 94% seems to speak for itself.

History

Let us now briefly follow this campaign through its salient phases and observe the varying effects of different tactical situations on surgical organization and policy. Some 30 surgeons actually took part in the epic of D Day—surgeons of the forward units (C.C.S.s and F.S.U.s) which landed immediately behind the invading troops. Their adventures were legion and stirring, their work as arduous as it was excellent. In any building affording a minimum of cover to the cacophonous accompaniment of shells, bombs, mine explosions, artillery and anti-aircraft fire they worked steadily, fulfilling by rapid but careful selection of cases as important a function as they did by their excellent surgical technique. For even when tents could be erected the holding capacity of the beach-head—and for those first weeks a very thin beach-head it was, especially on the left flank by the River Orne—was minimal. Every case that had a reasonable chance of reaching the U.K. alive was evacuated, chiefly by the ubiquitous "ducks" to specially fitted L.S.T.s, and later by air. This amphibious evacuation proved up to the hilt the enormous value of the pre-D-Day practice landings when we got to know, and on the actual beaches to appreciate, the full and cheerful co-operation of the Royal Naval Medical Service—and, at that time, particularly of Surg. Capt. Miller. And yet in that first month of June, 1944, out of 21,000 surgical casualties, nearly 1,200 were operated on in Normandy. Five hundred of these were abdominal wounds, 130 chest wounds, 200 amputations, 150 compound fractured femurs, 60 penetrating knee-joint wounds, and 50 gas gangrenes. Under the conditions existing, that 80% of the 1,200 should have survived is a tribute to the surgical pioneers of B.L.A. Incidentally, they held and saved 70% of their 500 abdominal cases. At this stage it is fitting that we should remember the air-borne surgeons who dropped on D Day on the far bank of the Orne. Their results are included in the above excellent figures. And then gradually—very gradually—the beach-head became a bridgehead. Fighting was intense and continuous. The weather was hot, but there were few days without showers. Either mud or dust was always with us; the few roads, all the lanes, and most of the fields were full of transport; enemy air activity persisted at night, but most casualties were due to mines, mortars, and artillery.

In the midst of all this a medical organization soon took shape. The remains of the original beach units became evacuation centres; a line of small hospitals, their surgical potential boosted up by the addition of F.S.U.s, were established a few miles inland, and ahead of this the C.C.S.s and their attached F.S.U.s bore the main brunt of the surgery. These "surgical centres" consisted usually of two C.C.S.s lying together and working alternately—to each of which were attached 2 F.S.U.s and an F.T.U.—the whole being screened by an F.D.S. filtering off sick, exhaustion cases, and minor wounded. Such a set-up in the restricted confines of the bridgehead worked admirably and smoothly. Lines of evacuation were short and cases were dealt with relatively soon after wounding. At this period several other events of importance were taking place. Nursing officers started to arrive from D + 8 onwards, resulting in an immediate and obvious improvement in post-operative care. No words of praise can be too high for these sisters, who at that stage and throughout the campaign, often under the most uncomfortable and unpleasant conditions, cheerfully and efficiently carried out their excellent work. In the midst of the Second (British) Army, the First (Canadian) Army began to take shape, and their various medical units were fitted into the scheme of things to come. At the same time more and more general hospitals were filtered in and set up under canvas in the pleasant orchards of Bayeux—so that limited holding of cases became possible. In these hospitals—and during that period they were nothing but glorified C.C.S.s—the will to work was enormous, and is well exemplified

by our lady physiotherapeutists, who, having no physiotherapy to practise, toiled long gruelling twelve-hour shifts to prove themselves first-class and invaluable receptionists.

Such was the picture for the first eight weeks—a gradually increasing orderly congestion which steadily reached bursting-point in early August. Meanwhile the battles of the Odon, of Caen, of Caumont and the woody Bocage country, and of the Orne, had been grimly fought and won. And so to the American break-out on the right flank, which wheeled left, advancing south and east. Much of the German Army was trapped in the resulting pocket; the rest poured out through the now famous "Falaise Gap," there to be decimated by Allied air forces. The carnage of men and animals, the litter of wrecked vehicles of every description, the masses of discarded equipment and arms, are sights which will never be forgotten by those who saw them. Then started the first "motoring war"—a rapid advance from Normandy into Belgium from Aug. 12 to Sept. 3. The Second Army pushed on steadily and rapidly across the Seine to Beauvais, Amiens, Lille, Brussels, and Antwerp. The Canadian Army's advance up the coast was more chequered by the "fortresses" of Havre, Boulogne and Calais, Dunkirk—which held out beleaguered to the end—and Ostend. Casualties were relatively light—morale was at its highest. Scenes of the greatest enthusiasm accompanied the advance, culminating in the tumultuous welcome given by Brussels on its liberation. The underground movement of both France and Belgium gave invaluable help during this period, harassing the retreating enemy, capturing and holding strategic bridges and buildings, clearing up residual enemy pockets, and giving information about mines and booby-traps. So precipitate was the advance that little trouble was given by these devices. Prisoners poured in—many of them wounded—and for the first time we took over and used German military hospitals. This was the beginning of the transition from tents to buildings. At that time we had not got used to the filthy condition in which the Germans left their evacuated hospitals—nor had we become acclimatized to the pitifully low standard of German war surgery. Chronic sepsis and toxaemia everywhere; pale, drawn patients and the all-pervading smell of pus; major joints drained; dozens, hundreds of empyemata; wounds sewn up, guillotine amputations, brain fungi, metallic fixation of compound fractures, heavy uncomfortable plasters, bed-sores galore—such was the German war surgery of 1944–5, for later in Belgium, in Holland, and in Germany itself we found the same sad state of affairs.

One surgical point of interest in the 300-mile advance was the different use of forward units made by the two armies. The Second Army kept its C.C.S.s "leap-frogging" one another; the Canadians used advance surgical centres (field dressing stations with attached field surgical units). Both in fact were eminently satisfactory. We feel that the principle of segregating forward surgery to C.C.S.s is still the right one in that conditions and facilities existing at this level are so much more suitable for both patient and surgeon; but there is no doubt that in a rapid advance the advanced surgical centre has a definite and valuable place. In this phase air evacuation really came into its own, and without it evacuation of casualties back over the war-scarred congested roads to Normandy would have been virtually impossible. As it was, the R.A.F., with the able guidance of Air Commodore Murphy and Group Capt. Bruce Harvey, appeared with a Dakota and almost magical regularity on what seemed quite impossible fields almost alongside C.C.S.s and surgical centres. We, as surgeons, then and on many subsequent occasions had every reason to be grateful to the R.A.F.—both its medical service and its air crews—for their whole-hearted co-operation.

Automatically the enormously stretched line of communication slowed up the advance, and in the pause a medical centre of forward units was established in the muddy fields of Diest (40 miles east of Brussels), a 600-bed hospital by herculean efforts was brought up from Bayeux and established in a luxurious Brussels hospital, and the Canadian units in Belgium increased rapidly. But air evacuation became a vital necessity, and it was provided either direct from Brussels to the U.K. or down the coast to Normandy.

Once again for a short period of two to three weeks the evacuation problems were almost those of D Day over again. During this period the lively battles—the recuperative power of the German Army then was extraordinary—of the Albert and Escaut Canals were fought and won and the way paved for the Second Army's dramatic drive through Eindhoven to Nijmegen and on towards, but sadly not to, Arnhem. The part of the airborne troops, both American and British, in this operation is too well known to require comment. And so was established the "Nijmegen corridor," a narrow hazardous projection, several times cut by German troops escaping eastwards, which needed three months' solid fighting before it was sufficiently expanded to allow a further major advance, and at the top of which from the very beginning were two C.C.S.s whose work was a surgical epic in itself. There cannot have been many occasions when a C.C.S. actually formed part of an attacking column!

During those same three months of hard gruelling fighting the Canadians cleared the coast north of Ostend and the bloody pocket of the south Scheldt, they won through the toughest of all small amphibious operations—the taking of Walcheren—and they lined the south bank of the Meuse up to the corridor. So was the great port of Antwerp really freed to perform its vital function in the campaign, only to find itself almost immediately the chief target of Hitler's newest devilish device—the "V" bomb. Meanwhile to the east and the west the corridor was broadened, and such now famous places as s'Hertogenbosch and Tilburg, Venlo, Venray, and Sittard slowly fell; the line was firm up to the Meuse right down to our junction with the American Ninth Army at Maastricht. Many times we worked with our American colleagues—either alongside or actually under the same command—a symbiosis which was always as happy as it was fruitful. So also were our frequent meetings with Col. E. Cutler, the Chief Surgical Consultant to E.T.O.U.S.A.

These dour battles over the waterlogged flats of northern Belgium and south-east Holland produced a steady flow of casualties—chiefly from mortar fire and from the ubiquitous mine-fields. Forward surgical units were always in the van, evacuation was good, by air and by train; and a large and efficient organization of hospitals, transplanted from Normandy, became established in Belgium and northern France to deal with all except the long-term casualties.

And so to the brief hectic interlude of Rundstedt's break-through in the Ardennes and those weeks of heavy snow and freezing cold and bitter defensive fighting once again. The almost entire absence of "trench feet" during this time was a point of noticeable interest, as was the increased difficulty in resuscitating wounded previously exposed to the rigours of the weather.

Then a mounting crescendo of activity—tempered by a rapid thaw and the consequently appalling condition of the roads—until on Feb. 8, 1945, the First Canadian Army, heavily reinforced with units of the Second Army, began their brilliant drive down from Nijmegen through the mine-strewn heavily fortified (Siegfried Line) Reichwald Forest to clear the territory between the Meuse and the Rhine: fighting in Germany—a devastated belt as the result of previous R.A.F. bombings—and fighting as bitter as any since D Day. Large concentrations of forward surgical units at Nijmegen and Venray had a hectic time. One C.C.S. alone dealt with 5,000 cases in three weeks. But the result was achieved early in March, and we sat on the banks of the Rhine. A short period of regrouping and then the triumphant crossing of the Rhine on March 23, 1945, accompanied by its "biggest-yet" airborne landing—a "crossing so beautifully planned strategically that the resulting casualties were surprisingly and unexpectedly light."

And so to the "Second Motoring War"—a streaming out over the Westphalian plain north and east against weakening opposition; short pauses for determined isolated pockets of resistance and at the major rivers—the Weser and the Elbe; a relatively easy capture of Bremen and a simultaneous surrender of Hamburg and arrival on the Baltic coast—and the final surrender in the first week of May. Meanwhile the Canadians had crossed the Rhine, below the famous Arnhem, and pushed on to the North Sea, thereby cutting off the entire German armies in Holland. They rapidly advanced north to take part in the Battle of Bremen and so share the concluding victory.

All this last stage saw steady but relatively small casualty lists—being dealt with by the rapidly leap-frogging C.C.S.s and small hospitals, and with advanced surgical centres again in the limelight. Problems greater than surgical casualties soo

emerged: masses of German prisoners, both wounded and unwounded, numbers of displaced persons of every conceivable nationality wandering in every direction in various stages of disease and starvation, and the ghastly horrors of Belsen, Sandbostel, and other smaller concentration camps. Even before hostilities ceased three large general hospitals had been moved into Germany to assist in dealing with these problems and to speed the last of our battle casualties on their way.

Units

It is not our intention to deal in any detail with the various surgical units involved in this stirring picture, but simply to stress some salient points that seem of importance. It was a great pleasure to us to note the increasing interest of divisional units (field ambulances and field dressing stations) in surgical policy. We firmly believe that the correct initiation of sound first aid and judicious but limited resuscitation at this level is of vital importance in the subsequent success of surgical treatment proper. Every possible effort was made by Army Surgical Consultants to contact and to advise forward medical officers.

The C.C.S., practically always with attached field surgical units, has borne the brunt of the serious forward surgery. As at present constituted, it is rather too small, but in any planned action two C.C.S.s were brigaded together and screened by a F.D.S., which took off lightly wounded, sick, and exhaustion cases. Such an arrangement worked admirably, the two C.C.S.s functioning in rotation according either to the number of admissions or, more frequently, to the number of cases awaiting operation. It was of interest to note that a steady 15 to 20% required operation at this level. To all such set-ups one or more of those invaluable little units—the field transfusion units—were added, and were responsible not only for the resuscitation of operative cases but also very largely for the choice of priority in operation and for assistance in post-operative care. Each C.C.S. carried 8 to 10 nursing officers, whose work, as already mentioned, was beyond praise. The type of case dealt with at this level became quite stereotyped: haemorrhages; severe multiple wounds; traumatic amputations; abdominal, thoracic, and abdomino-thoracic wounds; severe compound fractures, especially femurs; and suprapubic drainage for paraplegias. In such cases the average surgeon could do approximately 75 in his tour of duty. This we found was optimum at "12 hours on and 12 hours off." The latter period included ward visits as well as rest.

The siting of C.C.S.s of armies varied with the tactical situation from 2 miles behind the "line" to 80 miles, but the vital time interval between wounding and surgical care remained at a remarkably steady average of just under 12 hours in all conditions. We believe firmly that the right place for forward surgical treatment—from the patient's, the surgeon's, and the nurse's points of view—is just out of enemy artillery fire and behind our own big guns. This ideal was by no means always achieved.

The advanced surgical centre (F.D.S. and F.S.U.s), as has been already pointed out, was used on many occasions, but as a surgical entity it is definitely "second best" to the C.C.S. Its value in a rapid advance of a very mobile type of warfare has become more and more appreciated, not only by medical administrators but also by combatant generals.

The 200-bed general hospital was in this campaign used as a glorified C.C.S.—and as such fulfilled a most valuable role. To allow this, surgical potential had to be boosted by the addition of F.S.U.s. We feel that this unit would be better employed in producing slightly larger C.C.S.s and that its intended semi-static functions might well be carried out by an F.D.S. On the other hand, the inclusion of a 1,000-bed convalescent depot in Army areas was of inestimable value in saving man-power and in ensuring rapid rehabilitation.

A word about the special neurosurgical and maxillo-facial teams. We officially had one each of these per army and we had one thoracic team per Army Group. In fact, by incorporating specialists in ordinary hospital establishments we possessed extra neurosurgical and thoracic teams. But compare this with the Americans' 12 to 15 neurosurgeons and 7 to 8 maxillo-facial surgeons per army! However, the work done by these few special teams was relatively as great in quantity as it was excellent in quality. The value of adding an otologist to maxillo-facial teams was amply proved. The advantage of the neurosurgical and maxillo-facial teams working close together, and with an ophthalmologist readily available, was already known—and the policy was adhered to. Luckily, the cases treated by these two teams do not require urgent operation; after preliminary first-aid surgery and the provision of chemotherapeutic prophylaxis they can safely await definitive operation for several days if necessary, without undue risk; and they travel well.

Hence in the Normandy days many cases were sent to the U.K. for definitive treatment; in the Belgian period the teams remained in Brussels and Antwerp almost until the Rhine crossing—air evacuation providing their pabulum in good shape and relatively quickly. Nevertheless, to cope with the urgent "special case," and more particularly with the special wound combined with another wound requiring immediate surgery, we felt that further "special" cover was necessary, and this was provided by training a proportion of F.S.U. surgeons in elementary maxillo-facial and neurosurgical work and by giving them minimal special equipment—a policy which in the latter part of the campaign paid good dividends. There is no doubt, too, that the base areas of any theatre of war require cover in these specialties as well as the armies.

The work of the thoracic teams was limited by our proximity to the U.K.; for their problems are essentially those of the complicated chest wound or the chronic case. It is essential that all forward surgeons should be able to deal with the preliminary treatment of a penetrating or sucking chest wound, and even more essential that well-trained chest physicians should be attached to forward units.

Clinical Lessons

What have we learnt clinically from the surgery of this campaign? We will not enter into a description of all the various types of war wound, but simply list a series of facts that have emerged from the mass of clinical material and of questions that have been raised and still await solution.

Extensive Flesh Wounds.—These have a high operative priority—at least equal to that of the "bellies." Massive tissue damage leads to a severe degree of "shock," against which resuscitation is often of no avail and for which urgent radical surgery is the only life-saving measure. One other valuable lesson learnt was the great importance of rest and immobilization in these cases, either in transport or post-operatively, and irrespective of whether they are complicated by bony injury or not.

Gas Gangrene.—Compared with previous campaigns this nightmare condition was conspicuous by its absence. The majority of the relatively few severe cases were in German prisoners, who often took some time to collect. In an operation of this magnitude, to have recorded something less than 300 cases of anaerobic myositis can only be described as phenomenal. The reasons which may possibly account for this different picture are discussed in general terms later. When it did occur it still carried a 20% mortality. "Gas-gangrene cellulitis" became recognized more and more as a clinical entity as experience increased. Some 70 cases were reported, with a mortality of 10%. Gas gangrene at hospital level was negligible.

Abdominal Wounds.—This group of cases—a large one of approximately 5,000—has also produced extraordinarily good results. An overall mortality of around 30%—a figure which reports from the United Kingdom suggest is not markedly raised in the later stages of treatment—is highly creditable. This improvement is, we feel, not due to any one factor. Little change has been made in actual technique, but principles of treatment have been both standardized and adhered to. Penicillin has been used, and has certainly favourably affected post-operative complications, but has probably had little to do with the lowered death rate, as two-thirds of deaths from penetrating abdominal wounds occur within two days of operation. A strict routine of post-operative care has undoubtedly been an important factor.

Suturing of individual small-intestine wounds as against resection, unless the latter procedure is demanded by mesenteric vascular injury or massive damage, remains a firm principle; as does also exteriorization of large gut wounds—although this on the right side is by no means the ideal answer. Latterly in the smaller right colon wounds, suture with drainage, attachment of the sutured gut to the peritoneum, and even ileo-colostomies have been performed with success in well-selected cases. The formation of a good spur in colostomies wherever possible greatly facilitates secondary procedures.

Liver wounds that reach surgery have not given great cause for concern, and what trouble there has been is from bile more often than from blood. Fibrin foam as a haemostatic in this region is worthy of more extensive trial. A more conservative attitude regarding wounds of the renal parenchyma has produced good dividends—and we have learnt that the thoracic approach to the spleen is as good as any when the nature of the wound allows it. Of approaches in general, the rectus muscle split has steadily grown in popularity; but

the golden rule of an incision sited as far as possible over the suspected lesion and big enough to give good exposure still holds. The value of a posterior drain, if necessary after removal of the coccyx, in rectal and pelvic colon wounds became obvious; and of drainage in general we would say, "Avoid drainage if possible, but if in doubt, drain."

Radiological examination has, in the presence of the very common multiple small wounds of present-day explosive missiles, assumed a relatively far greater importance.

Burns.—The conspicuous absence of severe burns has been one of the welcome and noticeable features of this campaign. Only about 1,000 burns were admitted to forward units, and only one-third of these were identified as serious. In this latter class there was a mortality of 5%. From the hospital angle, burns accounted for 3% of all admissions (surgical) and for 2% of all battle casualty cases. This very marked difference in comparison with the M.E. campaign leads one to suppose that climatic conditions, both directly and indirectly, must have a very big effect on the incidence of burns.

Treatment was of the simplest, and was standardized: as a preliminary (apart of course from the necessary resuscitation), gentle cleaning and the application of an oily dressing containing a bacteriostatic (sulphonamides or, later, penicillin). Burns were immobilized so far as was possible, and dressed as infrequently as possible. Cases which were considered too severe to be treated under this regime were skin-grafted during a course of parenteral penicillin—the most severe being, whenever possible, referred to plastic surgeons for treatment.

Chest Wounds.—In this field improvement came from the better appreciation of certain simple facts rather than any new technique. For example:—(*a*) That chest wounds do *not* travel well in the first five or six days and should be held in forward units until stabilized. (*b*) That there is no danger in emptying a pleural cavity far earlier than was previously considered advisable—i.e., within 12 to 24 hours. This emptying applies as much to air as to blood. In certain units the use of an apical tube for draining a pneumothorax was proving "practical politics." Many surgeons were emptying the pleura by catheter previous to inserting the last stitches closing a sucking wound, and at the same time the anaesthetist would expand the lung by positive pressure. The slogan produced by our medical colleague (Brig. E. Bulmer)—"Having saved the life, save the lung!"—has governed our policy in these chest wounds, and by far the majority of cases have shown a reasonably well expanded lung before transference to base hospital. When it has been difficult to achieve this, the cause is frequently a lung haematoma—a condition, it is felt, not hitherto sufficiently appreciated. What the late effects of this early definitive treatment will be in comparison with those of the last war and previous campaigns only time can tell—but we are hopeful. (*c*) That once a sucking wound is closed, penetrating chest wounds are better dealt with and supervised by a physician. Considerable time is required to produce optimum results—and for the forward surgeon time is usually at a premium. The forward physicians have in this campaign done yeoman service. (*d*) That chest cases, like all other serious wounds, are shocked and require resuscitation. Admittedly, in view of the site of the lesion, this should be carried out carefully and rather more slowly than is now accepted as usual. For the immediate resuscitation of chest cases blood is much safer and more valuable than plasma. The risks of producing pulmonary oedema by giving intravenous fluids are infinitely less than the risks run by not giving them at all.

At the end of the campaign the general impression regarding thoracic wounds is that there has been a very marked improvement in treatment and results as confidence grew from increased experience. So much is this the case that we feel, and have the agreement of our thoracic surgeons, that forward surgeons might well, with suitable direction, be a little more ambitious in the early stages, both with safety and with advantage to the patient.

Vascular Injuries.—Here is a surgical field still in the throes of exploratory tilling—and a very important field in its inevitable (at the moment) wastage of limb and life. The majority of our fatal cases of gas gangrene have been those associated with vascular damage, and a considerable percentage of the total amputations have resulted from irremediable injury to main vessels. No fewer than 1,150 cases (i.e., 2% of the total) were specifically recorded by forward surgeons. This group carried a 5% mortality. And at the end of it all we were still relying on ligature as the mainstay of treatment. The success or otherwise of this procedure depended upon a number of factors, such as length of time between wounding and operation, amount of associated muscle damage (i.e., obliteration of potential collaterals), site of vessel injury, amount of sepsis in the wound producing the vascular damage, and, even more important in distal wounds on the same extremity, extent and severity of accompanying wounds elsewhere and the patient's general condition. Even allowing all these variables, one often saw almost comparable cases—one viable, the other gangrenous. Arterial spasm is most certainly an entity, and the individual's sympathetic response to various stimuli is undoubtedly yet another factor.

Little benefit was achieved in these cases either by sympathectomy or by local stripping of vessel coats. Sporadic good results following arteriectomy were reported in cases of so-called spasms. The local and primary repair of a partial tear of a major vessel was also occasionally successful, but one felt always that there was too much of an element of luck in these cases to make them of any scientific value. The calf fascia-splitting incision (as popularized in C.M.F.) was found useful, but only in selected cases—where the lower leg was markedly swollen and cold and the skin glazed. The most stimulating line of advance was the work of certain surgeons (in particular Major W. Mustard, R.C.A.M.C.) in performing primary intubation of damaged major vessels. Tubes of glass and acrylic resin were used, the rationale being to restore circulation through the main vascular channels of a limb at the earliest possible moment, with the idea of removing the tube and carrying out definitive treatment (e.g., suture, venous graft, ligature) within a few days when circulatory stability had been regained and collaterals opened up. Results of this technique produced some unexpected and occasionally disquieting secondary phenomena—e.g., the effect of suddenly washing into the general circulation the metabolites of a limb in which the circulation had been stagnant for several hours. However, it is felt that along this line there is most chance of a material advance.

In the meantime, ligature, with all its chanciness, is still the accepted treatment. The ligatured popliteal still gives far too many bad results, the femoral prognosis is fifty-fifty, and the brachial good. We have learnt that it pays to keep these cases in forward areas for several days, until a definite decision as to the future of the limb has been arrived at.

Knee-joints.—A series of 1,365 penetrating wounds of the knee-joint, with only 7 deaths, would have sounded like the worst kind of fairy-tale in 1940, and even in the Middle East a large proportion developed pyarthrosis, with subsequent toxicity and disability. And yet these are the B.L.A. figures. The cases were treated by careful excision, by suture of the synovial layers without drainage, by the instillation of local penicillin (50,000 units) into the joint cavity, and by careful immobilization in a Tobruk splint for transit. At the same time a course of parenteral penicillin was instituted. Practically all these cases were transferred direct to the U.K. Later reports from orthopaedic centres there underline the really amazing change in the picture of these cases. So good was their general and local condition on arrival that there was at first a tendency to push convalescence a little too fast. A series of local, but unimportant, flare-ups in the joints with an effusion were evidence of this quite understandable over-enthusiasm. As examples of the later results extracts from two reports from the U.K. may be given.

> (*a*) Series of 78 cases in a transit E.M.S. hospital in the first month of June, 1944. 44 had serious accompanying bone injury, 4 required amputation (2 for joint infection, 1 for popliteal artery damage, 1 for gas gangrene). At eight months 33% had flexion better than 90%, and another 15% better than 45%.
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> (*b*) A later series of 101 cases at an orthopaedic centre: Normal knee, 67; expected to be normal, 10; useful range, 13; ankylosed, 11; no deaths; no amputations. Only 9 cases had suppurative arthritis; 4 of these were healed within six months, three of them much earlier. Of the 11 ankylosed knees, 9 had marked bone damage. No drainage of an actual joint was ever necessary.

This is a stimulating picture, for which, of course, we must undoubtedly to a large extent thank penicillin; but, as ever, this invaluable agent should be thought of only as the handmaiden of good surgery. A comparison with German knee-joints is tragic. They perform large numbers of primary excisions, they drain every joint with outsize tubes, and their immobilization is minimal. Hence all their knee-joint cases are septic, and those who do not die of toxaemia either have to lose a limb or accept a deformed and useless one. So there is credit due elsewhere than to penicillin!

Amputations.—Little need be said on this subject. Approximately 3,200 amputations (excluding digits) were performed in this theatre—2,600 in forward areas with 7.5% of mortality, and 600 in base hospitals with 1.3% mortality. The principles of flap formation, of avoidance of primary suture, and of the use of delayed suture have been strictly adhered to. We have considered a guillotine amputation a surgical crime (it is the accepted German method!), and we have preached that amputations through joints should be performed only in cases of dire emergency.

Delayed Suture (with which should be grouped simple skin-grafting).—There is nothing dramatic about these techniques, but the results achieved have led to a saving of man-power, a reduction in wound complications, and an economy in hospitalization, in supplies of drugs and equipment, and in surgeons' and nurses' time which it is quite impossible either to compute or to appreciate fully. As holding capacity increased towards the end of 1944 in Belgium, more and more cases of at first simple flesh wounds and later of more complicated wounds (e.g., compound fractures were rendered "simple" before evacuation to the United Kingdom) were sutured in base hospitals. During the last six months of the campaign these cases provided more than 50% of the work in base hospitals, and during the process a great deal of interesting and valuable clinical and scientific research was carried out. This has been fully reported

elsewhere ("21 Army Group Penicillin Therapy"). Results were universally satisfactory—90% sutures being considered not quite good enough!

It is impossible here to enter into the many points of detail which have been of interest, but perhaps one example may be quoted as being indicative of the saving of time, equipment, and energy resulting from such simple measures. Let us always remember, however, that it is only the laying of the bogy of wound sepsis by good preliminary surgery and by penicillin and its allies which makes this mass repair a practical proposition. The simplest type of wound—a "through-and-through" bullet wound of the soft tissues of the thigh—was produced by an officer (accidentally!) shooting his batman through both legs. The surgeon applied local penicillin and a sterile dressing to one entry wound and one exit wound; the other entry and exit he excised and three days later sutured. At the end of 10 days (i.e., a week after suture) stitches were removed from the sutured wounds, leaving a linear pliable little scar. The other two wounds remained perfectly clean and ran a normal course of healing; but they took 23 days before dressings could be discarded, and left "threepenny" slightly depressed scars, one of which was adherent to deeper tissues. A simple example of a very important advance!

Post-operative Complications

Most of these are too well known to merit discussion here, but we would like to record the very noticeable absence of post-anaesthetic chest complications throughout the campaign—even in the bitter weather of last Christmas in the snow of the Ardennes and the mud and chill of eastern Holland—and at the same time to pay tribute to the very high standard of anaesthesia that was maintained. But two complications probably remain in the forefront of the minds of most B.L.A. surgeons—fat embolism and so-called "anuria."

(*a*) *Fat Embolism.*—The occurrence of a small series of 5 cases (4 of which were fatal and 3 proved by post-mortem examination) in the early battles around Caen aroused our interest and prompted the thought that this little-understood and rather dire complication of trauma (or should one say mechanical and surgical trauma, and even add anaesthesia to the list?) was perhaps more frequent than had previously been thought the case. Subsequent investigations have certainly confirmed this supposition—but have unfortunately done little to elucidate the problem. We have learnt to recognize fat embolism clinically with much more accuracy, and hence can say that a larger proportion than 20% (as in the "warning" series) survive. Over 100 cases have been reported during the campaign, and doubtless many more have occurred. It would seem that the mortality is approximately in the neighbourhood of 50%. The following facts of interest have been noted often enough to be worth recording:

(i) Although usually the sequel of a major wound involving large masses of soft tissue, this is by no means always so. Cases have been reported several times after retroperitoneal haematomata, once or twice following chest wounds, and once with a straightforward penetrating abdominal wound involving small intestine only.

(ii) The old theory that the embolic fat is derived from the marrow of a broken bone is quite exploded.

(iii) The predominance of cerebral symptoms over pulmonary has been a striking feature.

(iv) Petechiae, most commonly seen over the shoulders, upper chest, and neck, were the exception rather than the rule.

While a considerable amount of research has been done in the theatre on this problem, it must be admitted that little light has been shed on the possible aetiology. Apart from symptomatic measures, the only definitive attempt at treatment, to our knowledge, was the intravenous injection of 90% alcohol. The patient recovered, but whether from fat embolism or acute alcoholic poisoning is not related!

(*b*) *Anuria.*—This aetiologically vague but clinically very definite syndrome was seen all too often in many of our more serious cases. During the V-bomb raids on Antwerp cases of "crush syndrome" were relatively common, but, apart from this better-known variety, cases were continually being discovered in which there was no suggestion of "crush" but in which anuria developed. Not by any means all were fatal, but, once established, the outcome of the case appeared to be in the lap of the gods. As time went on we had reason to doubt the value of intravenous alkalis, which we at first strongly recommended. Likewise, no success was obtained from high-spinal anaesthesia or from splanchnic block. The consensus of opinion at the moment would seem to favour the conjecture (and that is all it is) that a circulating toxin is produced by massive tissue damage—the effects of which are widespread. The kidney tubules are possibly one of the affected parts. It has been noted that the same toxin may act on normal blood fat in such a way as to change its physical state and render it more likely to be deposited in pulmonary and cerebral capillaries.

Naturally, in war, trauma—and severe trauma—is very much with us; but the possibility of both the above conditions occurring relatively far more frequently in civilian life than was previously recognized should be borne in mind. They offer a rich field for future research.

The Surgeons

Two out of every three B.L.A. surgeons—the men responsible for the work described above—had never met a war wound face to face before D Day and their arrival in Normandy. The remaining third were veterans of the M.E. campaign. The effect of the latter on the former, the effect of six months' training as a surgical team before D Day, the value of a routine procedure standardized so far as was possible and based on previous practical experience, are all borne out by the recorded results. The conservatism and judgment of the smaller group and the loyalty and willingness to learn of the larger—and, let it be fairly said, the excellent surgical technique of both—produced an atmosphere which was as stimulating and provocative as it was efficient and friendly. War surgeons are really quite an individual class—and are bred as much as they are born. They must be essentially competent technicians, with a good anatomical background—not too slow, not *too* meticulous—capable of endurance, blessed with common sense (which gives sound judgment) and human understanding, adaptable and cheerful—doctors as well as surgeons! Naturally there are many varieties of this prototype, and most of them are good. The war surgeon acquires enormous confidence. If he ever aspires to become a good surgeon he must possess or acquire a corresponding amount of clinical and technical knowledge.

In this thought lies a description of the three main classes of war surgeon: the one who will always be a menace, possessing only confidence; the one who was a surgeon before he was a war surgeon and will only have to readjust on return to civil life; and the one who has become, or, even more important, *may* if properly handled become, a good surgeon on the basis of his war experience together with a desire to acquire a wider knowledge.

Such were the surgeons of B.L.A., though Class I was almost conspicuous by its absence. They were good war surgeons, they were good friends, and they made a good team.

Summary

It has intrigued us to probe into the reasons for these improvements and for the general high standard of surgery in this campaign, considering that very little new has been added in technique and very little new has been discovered in research. Many are the discussions we have had on this subject in many weird places. The following points summarize our opinions:

1. *Man-power.*—Probably no group of surgeons ever worked on better material. The men of 21 Army Group were fully immunized and fully trained; their morale was at its highest—"the last lap" feeling; they were well clothed and well fed, fighting in a climate to which the average British soldier is more accustomed; hygiene, both personal and unit, was exceptionally good; and welfare services were excellently organized to cope with the leisure hours.

2. *Tactical Situation.*—21 Army Group was always a winning army! It had the initiative and could dispose its units as required. Air cover was to all intents and purposes complete, enabling patients to be held or transported in safety more or less at will. The modern type of warfare—essentially mobile and rapidly moving—ensured that units were never overwhelmed with cases.

3. *Surgical Policy.*—The standardization of policy, based on practical experience and inculcated into a united team previous to the beginning of the campaign, has already been discussed. To obtain optimum results we have attempted so far as was possible to have the individual surgeon working with compatible people at the right type of unit and at the right level. Having laid down a policy, which must of course be elastic enough to cope with changing circumstances and not so hidebound as to throttle reasonable initiative, we feel this placing of personnel and the dissemination of clinical (and topical!) news by constant personal contacts to summarize the duties and responsibilities of a consultant to his surgeons.

4. *Evacuation.*—Speedy collection of wounded has made early surgery possible, and the remarkable development of air evacuation has permitted early and more definitive surgery to be performed sooner than in any previous campaign. Provision for interim treatment during evacuation, whether by road, rail, sea, or air, has been brought to a high pitch of efficiency—and in this respect we would stress the importance of adequate immobilization, wherever possible, of a wounded part during transit.

5. *Forward Surgery.*—The gradual pushing forward of surgical potential (a process initiated in the desert by the first "mobile surgical teams" of Major-Gen. D. C. Monro) until an optimum level has been reached, considered by us to be C.C.S. level or theoretically

just on the corps side of the corps-divisional boundary, has ensured the wounded man getting as soon as possible to surgical care—the latter being provided in circumstances which afford the maximum facilities for surgeon and nursing staff and the maximum comfort for patient. This potential to-day is provided by that invaluable little self-contained unit the "field surgical unit."

6. *Pre- and Post-operative Treatment.*—There is no doubt that on both sides of the operating table considerable, if not dramatic, advances have been made. Resuscitation as provided by the Blood Transfusion Service has been in every respect admirable. They were responsible not only for actual resuscitation, both pre- and post-operative, but also for the selection of priority cases awaiting operation—a task demanding the soundest clinical judgment and common sense. They also delivered to all units requiring them supplies of blood, plasma, saline, glucose, and penicillin as if by divine inspiration, no request ever having to be made and no notification having to be given of change of location—even to the most out-of-the-way spot. Indeed, the supply system as interpreted by our Base Transfusion Unit might well serve as a model for the cutting of red tape during action. The gay good humour of all the B.T.U. personnel, even under the most trying and difficult circumstances, was an inspiration to all with whom they came in contact.

So also was the presence of nursing officers in forward surgical units. Much of the vast improvement in post-operative treatment (and with its penicillin injections and drips, its intravenous infusions, its gastric suctions, its morphine, its sera, apart from all other routine nursing requirements, this is a complicated ritual to-day) was due to their excellent work. Added to this, too, is the undoubted value of a woman's presence both beside the bed of a recently wounded man and in the wards and theatres with the male personnel. In both spheres they have done much to raise morale, and their cheerful but quite obviously genuine enjoyment of their arduous and often dangerous work is deserving of the highest praise. In this connexion, too, mention must be made of our B.R.C.S. services, under the able and kindly direction of Major-Gen. Lindsay. They never failed, even in the most forward areas, to provide those little comforts and that personal attention which mean so much to a wounded man, and incidentally to his surgeon, who benefits from his patient's raised morale.

7. *Penicillin and Sulphonamides.*—Sulphonamide therapy was well established previous to this campaign, but in our lavish supplies of penicillin we have certainly been most fortunate, and to its beneficent effect must go considerable credit for the results achieved. Its prophylactic use on the scale employed in Normandy was an entirely new venture and paid handsome dividends. Since then both prophylactically and therapeutically it has been used to an increasing extent with consistently good effect. Among other clinical researches carried out in Army Group (and described in full in "21 Army Group Penicillin Therapy") was one which proved that penicillin alone offered as good protection against wound infection as did a combination of penicillin and sulphonamide.

8. *Surgeons and Surgery.*—By no means least has been the effect of consistently good surgery carried out by an enthusiastic and capable team of surgeons. We had but two women surgeons; we had many women anaesthetists, radiologists, and surgical general-duty officers—far more than any other theatre of war had ever dreamt of. Let it be said that their part in this saga was not one whit less praiseworthy than that of their male counterparts. We were very, and we think justifiably, proud of our whole team.

Conclusion

As was stressed at the beginning of this article the success of a medical service depends essentially on close collaboration and mutual understanding between the administrative and clinical sides, and it is with very genuine feeling that we express our gratitude for their unfailing and full co-operation, to our two Ds.M.S. (Major-Gens. Sir Percy Tomlinson and E. Phillips), to the D.Ds.M.S. Armies (Brigs. E. Phillips, Galloway, and Glyn-Hughes of Second British Army, and Brigs. Fenwick and Elder of First Canadian Army), to the D.Ds.M.S. Corps and to the Consulting Physician (Brig. E. Bulmer), all the clinical advisers of Army Group, and to the surgeons, nursing officers, and other ranks, both male and female—all of whom have contributed materially to making our task as pleasant personally as it was fascinating surgically.

B. M. Schwartz (*J. Amer. med. Ass.*, 1945, **128**, 704) records his observations on 14 cases of Vincent's angina treated with penicillin. The recommended dose is 100,000 units, administered intramuscularly in 20,000 units every three hours, and was found to be of definite value. P. L. Shallenberger, E. R. Denny, and H. D. Pyle (ibid., p. 796), who also treated 14 cases of Vincent's angina with penicillin, obtained equally good results from intramuscular injection.

THE MIKULICZ RESECTION OPERATION FOR GANGRENOUS INTUSSUSCEPTION IN INFANTS

BY

T. A. HINDMARSH, M.S., F.R.C.S.

A. W. STEWART, F.R.C.S.

AND

B. MORRISON, M.D.

(*From the Royal Victoria Infirmary, Newcastle-upon-Tyne*)

When in an infant an acute intussusception becomes irreducible and gangrenous, not only is the choice of a suitable operation difficult but the results are usually bad. The operation commonly chosen in these cases is either resection of the gangrenous mass with end-to-end or lateral anastomosis, or exteriorization of the mass with the formation of an enterostomy, with a later attempt to close this if the child survives. Suture of the proximal part of the intussuscipiens to the intussusceptum has also been suggested, leaving the gangrenous mass to slough and pass per rectum. These operations are far from satisfactory; very few children survive.

In view of these results we have recently chosen to treat the irreducible gangrenous intussusception by a modification of the Mikulicz type of resection, and we are able to report here two successes. We recognize the danger of generalizing from two cases, but the results in these were so much better than we have experienced with other methods that we feel justified in publishing this report. At this point, however, we wish to make clear our view that no major operation of this sort in an infant will be successful unless the child is given special pre-operative and post-operative treatment by those who are experienced in modern paediatric methods and can judge from hour to hour what measures are required to be taken. A note by Dr. Brenda Morrison on these measures is included in this paper.

The Mikulicz type of resection which we recommend is made possible in infants because at that age the caecum, ascending colon, and transverse colon are very mobile. In both of our cases it was found easy, after a small incision of the peritoneum on the outer side of the intussusception, to mobilize the mass and to bring it out of the abdomen with very slight trauma, thus leaving the next steps of the operation to be performed expeditiously and with relative ease. The operative procedure followed in both cases was similar. A preliminary attempt at ordinary methods of reduction having failed, the intussusception was found to be gangrenous, and some form of resection was therefore necessary. The viable portions of the ileum and colon were quickly joined together, in the usual double-barrelled Mikulicz colostomy method, by two layers of continuous catgut sutures, and the abdominal incision was closed around the bowel by interrupted sutures. The condition of both cases at the end of operation was satisfactory. After six days the spurs were crushed and removed by the ordinary Mikulicz method with small crushing clamps. Six days later—i.e., on the twelfth day after operation—the stomata were closed after the bowel ends had been freed and inturned.

Case I has now made an excellent and permanent recovery. The patient has gained satisfactorily in weight, and a slight tendency to diarrhoea, due to loss of the ileo-caecal junction, has cleared up. The second case has made an excellent recovery after operation, and it is anticipated that this patient also will return to normal health.

Case I

On Oct. 11, 1944, two and a half days before admission to hospital, the patient, a female child aged 5½ months, started to cry suddenly and became deathly pale. Towards evening she became drowsy and difficult to feed. The doctor was sent for, and he put her on a glucose mixture. She was thought then to be suffering from a chill due to her teeth. The next day she appeared to revive to some extent. At 10 p.m. she was violently sick and the vomit was bright green. She looked very white and it was difficult to rouse her. She slept intermittently on the night of Oct. 12, and on the morning of the 13th she whimpered and vomited repeatedly, but did not appear to be in severe pain. Later in the day she was admitted to the children's department of the Royal Victoria Infirmary under Prof. Spence. No blood had been passed per rectum before admission and there had been only one small motion.

On admission she was found to be well nourished; her expression was anxious, eyes sunken, and tongue dry. The abdomen was slightly distended, and there was a readily palpable sausage-shaped tumour in the left flank extending down into the pelvis. Per rectum no mass was palpable, but some foul-smelling blood-stained fluid emerged on withdrawing the finger.

After pre-operative treatment had been carried out, at 4.30 p.m. one of us (T. A. H.) opened the abdomen through the usual lower right paramedian incision. A large intussusception was found extending well down into the descending colon. Attempts to reduce the mass inside the abdomen were not successful, and it was delivered out of the wound with some difficulty. After a portion of the intussusceptum had been reduced it was found that the remainder was completely gangrenous. The mass was then rapidly mobilized and removed by the modified Mikulicz method described; the loop was brought outside the abdomen, and healthy portions of the lower ileum and transverse colon were sutured together side by side. After the abdomen was closed the gangrenous loop was removed, and catheters were tied into the ends of the ileum and colon for drainage purposes. The opening was later dealt with as previously described, and the child ultimately made an excellent recovery.

Case II

This patient was a male child aged 10 months. On May 9, 1945, four days before admission, he vomited, and later in the day had attacks of crying. Between the attacks he lay quiet and looked very weary. All that night he vomited everything he took and had spasms of crying. Early next morning he passed a small reddish motion. There was no visible blood. The vomiting and screaming continued all day and the child seemed to become weaker. He lay very quiet between the attacks. The doctor was called in and prescribed a stomach mixture. On the 11th he was still vomiting, but was not crying nearly so much; he appeared very exhausted and whimpered occasionally. He continued like this until his admission to the children's department of the Royal Victoria Infirmary on May 13. The bowels had not moved since May 10 and there had been no frank blood passed per rectum.

On admission he was an obviously ill baby, pale and worn out, lying quietly with partly closed eyes. There were obvious signs of dehydration, but the nose and extremities were warm. The heart rate was 140. The abdomen was distended and tympanitic. There was guarding in the right hypochondrium and a suggestion of fullness, but no tumour was felt. Per rectum no mass was palpable, but on withdrawing the finger a small amount of brownish fluid was passed.

An intravenous drip was started immediately, and three hours later one of us (A. W. S.) examined the child under an anaesthetic. A fullness was felt in the epigastrium but no definite tumour. The abdomen was then opened and a small ileo-colic intussusception was found, extending to the middle of the transverse colon. Reduction inside the abdomen was unsuccessful, and the whole mass was delivered outside the abdomen with some difficulty. Some ileum was then reduced, and it was found that the remainder was obviously gangrenous. The mass was accordingly mobilized in the manner previously described, and healthy portions of ileum and ascending colon were secured together by two layers of continuous catgut sutures. After the abdomen had been closed the gangrenous mass was excised and catheters were tied into the ends of the ileum and colon for drainage purposes. The opening was later dealt with as described.

Pre-operative and Post-operative Treatment

Case I.—An intravenous drip infusion was set up on admission and 100 c.cm. of 0.2% saline with 4% dextrose was given before operation. The drip was continued during the operation and afterwards for six days. The total amounts of fluid given over this period were: 350 c.cm. pooled human serum, 200 c.cm. fresh whole blood, 300 c.cm. normal saline, and 1,600 c.cm. 0.2% saline and dextrose. In addition substantial amounts were taken by mouth (see Table I). Her immediate post-operative condition was fairly good—the heart rate was 200 per minute, but she was hydrating up and the circulation was satisfactory. The ileostomy did not drain at all for the first 36 hours, although the tube was patent, but the baby vomited only twice and took small drinks well. On the evening of Oct. 14, however, she began to deteriorate, becoming restless, pallid, and anxious. By the next morning she appeared moribund; the temperature was 98°, but the heart rate 190. She was sunken-eyed and cyanosed, moaned continually, and was very restless. She vomited dark-green fluid, and a further 300 c.cm. was removed from the stomach by aspiration. During the morning the ileostomy began to drain, dark-brown fluid faeces coming down the tube in spurts with each peristaltic wave. Several ounces had drained after a few hours, and the child became more restful and less fluid was aspirated from the stomach. By next day (Oct. 16) the bowel was draining well and the child was considerably improved. Blood examination at 8 p.m. on Oct. 15 had shown a marked anaemia of post-haemorrhage type: haemoglobin, 50% (7 g./100 c.cm.); R.B.C., 2,800,000; haematocrit, 20%. Blood urea was 64 mg. per 100 c.cm., plasma protein 6.4%, and plasma chloride 320 mg. Cl per 100 c.cm. plasma (normal range 340–380 mg.). A transfusion of 200 c.cm. of fresh blood plus 100 c.cm. of normal saline was given over 16 hours; after this the blood picture was: haemoglobin, 90% (12.7 g.); R.B.C., 5,200,000; haematocrit, 37%. Blood urea was 35 mg., plasma protein 5.8%, and plasma chloride 310 mg. Cl per 100 c.cm. (Oct. 18). She was able to take fluids by mouth from Oct. 16, and was given 1 oz. hourly for three days, then 2 oz. two-hourly for 4 days. She fed fairly well, with only occasional vomits. Fluids given were water at first, then 1 in 8 dilution Nestlé's milk, then humanized Trufood.

The interesting features were (*a*) the marked anaemia, which was almost certainly a result of haemorrhage into the bowel, as she passed three large stools after operation, consisting almost entirely of altered blood; and (*b*) the low blood chloride level.

Case II.—On admission this baby was in a state of established dehydration, with sunken eyes, inelastic skin, and greyish pallor. He was given 200 c.cm. of plasma in 1½ hours before operation and improved considerably, his face and lips becoming pinker. 50 c.cm. of fresh blood was given during the operation, and the drip was continued afterwards at a rate of 100 c.cm. of fluid every six hours. Normal saline and 0.2% saline and dextrose were given alternately for the first 36 hours, then plasma and normal saline alternately, and later normal saline and 0.2% saline again. Altogether the drip ran for 4½ days, and the total amounts given were: 450 c.cm. plasma, 50 c.cm. fresh blood, 1,250 c.cm. normal saline, 950 c.cm. 0.2% saline and dextrose. The stomach was aspirated every 4 hours for the first 3 days. He was given fluids by mouth from the start and drank well throughout. At first there was very little fluid obtained by aspiration from the stomach and no vomiting, and the child appeared fairly fit. However, on May 14—i.e., 48 hours after operation—his condition deteriorated considerably. He became sunken-eyed, with cold extremities and frequent restless spasms. Dark-green fluid was now aspirated from the stomach in large quantities and nothing was draining from the ileostomy. The blood chloride level was 305 mg. Cl per 100 c.cm., plasma protein 5.6%, and blood urea 58 mg. per 100 c.cm. It seemed that large amounts of fluid and salt were accumulating in the small intestine, and, though peristalsis was audible, drainage was not yet established. The chloride intake per drip was increased. During the next 24 hours drainage via the ileostomy became established and the amount removed by gastric aspiration lessened steadily. The patient's condition improved considerably, but he still appeared very dehydrated. By 10 a.m. on May 16 he was drinking eagerly and not vomiting, but the blood chloride level was down to 285 mg. Cl per 100 c.cm. The blood urea was then 23 mg. and haematocrit 36%. He was passing very little urine and still looked dehydrated. Two oz. of normal saline was given by mouth, alternating with 4 oz. of Trufood and Prosol mixture every two hours; he drank all this eagerly, taking unusually large amounts of fluid and sodium chloride for a baby of his age (see Table II). By May 18 the chlorides were up to 321 mg. and he appeared much better hydrated. The ileostomy was now draining soft semi-solid faeces. By the end of the week he was definitely out of danger and appeared remarkably well and contented.

The interesting feature of this case was the very low level reached by the blood chloride, and the amazingly high intake of sodium chloride by mouth and drip, which was very well tolerated; in fact, he showed great eagerness to drink the normal saline and never

TABLE I.—*Case I. Showing Fluid Intake and Output, with Blood Chloride Levels, during the First Week*

Date	By Drip (c.cm.)	By Mouth (c.cm.)	Aspiration and Vomits (c.cm.)	Blood Cl Level (mg./100 c.cm.)
13/10/44	230	60		
14/10/44	300	450	100	
15/10/44	420	300	500	320
16/10/44	300	350	50	
17/10/44	400	600	45	
18/10/44	400	400	0	310
19/10/44	400	400	0	

TABLE II.—*Case II. Showing Fluid Intake and Output during the First Week*

Date	Intake		Output		
	By Drip (c.cm.)	By Mouth (c.cm.)	Aspiration and Vomits (c.cm.)	Ileostomy (c.cm.)	Urine (c.cm.)
12/5/45	300				
13/5/45	400	90	50	10	30
14/5/45	600	720	560	30	90
15/5/45	700	540	360	300	60
16/5/45	600	580	0	140	60
17/5/45	100	1,230	0	?	
18/5/45	0	2,220	270	?	

refused any of it during the period of chloride deficiency. The estimated intake of sodium chloride per day is shown in Table III. This does not include the salt content of the milk food (Trufood and Prosol).

TABLE III.—*Case II. Showing Estimated Sodium Chloride Intake (apart from the Salt contained in the Dried Milk) and Plasma Cl Levels during the First Week.*

Date	NaCl Intake (g.)	Blood Chloride (mg./100 c.cm.)
13/5/45	2·9	
14/5/45	3·4	305
15/5/45	6·4	
16/5/45	4·8	285
17/5/45	10·8	
18/5/45	11·1	321

Comment

It is of interest that both these children were most profoundly ill about 48 hours after operation, with signs of intestinal obstruction, which was relieved when drainage from the ileostomy became properly established.

It is worth pointing out what large amounts of fluid, such as 0.2% saline and dextrose or normal saline, can be taken by mouth and retained by these ill children in addition to fluids given intravenously.

Summary

We report two cases of gangrenous intussusception, of two and a half and four and a half days' duration respectively, treated by a modified type of Mikulicz resection.

We consider that this method of treatment can be expeditiously carried out and that it offers a better chance of recovery in the "bad-risk" case than the ordinary methods of treatment recommended, such as end-to-end anastomosis or lateral anastomosis after resection or enterostomy.

We wish to emphasize the necessity for treating this type of case in a properly staffed and equipped children's department, as we feel that skilful pre-operative and post-operative treatment must play a major part in the recovery of these patients

TRICHOMONAS VAGINALIS INFECTION IN THE MALE

BY

F. L. LYDON, M.B., M.R.C.P.

Major, R.A.M.C.

The frequency of *Trichomonas vaginalis* infection in the female has for many years been recognized, but the similar infection in the male has not received the attention it merits, since it is by no means an uncommon cause of urethritis. During the past few years I have seen numerous cases of this nature, some of which I was fortunate enough to observe over many months, and the results of my investigations are put forward in the hope that with a higher index of suspicion when confronted with a "urethritis," especially one showing a tendency to relapse and chronicity, other workers will discover that many of these cases are due to infection with *T. vaginalis*.

The Organism

The description of the organism as regards size, shape, flagella, etc., may be found in most laboratory textbooks, but I would like to add some personal observations.

(*a*) *Shape.*—Although usually described as round or pear-shaped, I have seen in some preparations what appeared to be a stoma at the flagellated extremity, suggesting that the organism is in fact globular when not subjected to pressure. The flagella therefore may act primarily as a means of directing food particles into the body of the organism and not for the purpose of locomotion.

(*b*) *Method of Reproduction.*—It is, I think, generally assumed that reproduction is by simple fission, but on two occasions I have watched for a period of two hours a process best described as "budding." In one case a large organism (parent cell) was attached to a much smaller one (daughter cell) by a bridge of clear cytoplasm, the outer covering of both organisms being continuous. Separation resulted by the stretching and final rupture of this bridge owing to the action of the flagella of each organism in opposite directions. After separation the daughter cell was morphologically identical with the parent, though much smaller in size (6–8μ). On the second occasion (one parent and two daughter cells) the same appearances and results were observed.

(*c*) *The Occurrence of a Resting Phase.*—In some of my cases the active organism disappeared completely from the discharge for periods varying from about one week to two months. During these intervals, however, cells with a "hard" limiting membrane could always be found on dark-ground examination, which suggested that the organism had entered an encysted stage. Differentiation between these cells and some medium-sized epithelial cells is extremely difficult, but a certain facility is acquired by experience. If confirmed this observation of a resting phase is obviously of great importance both in diagnosis and in assessment of cure.

(*d*) *Method of Demonstrating the Organism.*—For convenience and clarity the dark-ground method is by far the best for the clinician. A drop of normal saline is placed in the centre of a slide. A loopful of the discharge is now dipped into the saline until the fluid takes on a slight opalescence. Recognition of the degree of opalescence necessary comes after a little practice, and I find that holding the slide to the light and looking at the fluid through the glass is of great assistance. A cover-slip being applied, dark-ground examination is carried out in the usual manner.

Pathology

Much divergence regarding the pathogenicity of the *T. vaginalis* is found in the literature: some support its claim as the primary pathological cause, while others look upon it as a parasitic invader following a primary bacteriological infection. Undeniably this latter view is supported by the marked number of organisms found in stained smears of *T. vaginalis* urethritis even on the second day of the appearance of the discharge; in fact, in my department, in any case in which stained smears of urethral discharge show large numbers of organisms the presence of *T. vaginalis* is suspected, and often confirmed. In spite of this, however, I feel that at the moment the problem is best considered in the same light as a Vincent's infection of the mouth, where somewhat similar conditions are necessary for the development of the disease—i.e., dead or damaged organic tissue on which the two organisms flourish together, each being necessary for the development of the other owing to some mutual symbiotic characteristics. This view saves a great deal of useless argument, since either *T. vaginalis* must be first grown in pure culture (or one of the many bacteria present) and shown to produce the disease before the problem can be finally settled.

Turning to the condition in the female, the marked preponderance in young unmarried women is of great interest, and in my opinion one must consider the possibility of extension to the vagina from the bowel in spite of the insistence by some workers on the specific nature of this organism for the vagina. It is well known that cyclical changes (in the vagina) occur, which cause a denudation of the vaginal mucous membrane at regular intervals, and this fact must, owing to poor drainage in young women, bring about a favourable nucleus for the invasion of parasitic organisms. Again, organisms very similar to *T. vaginalis* are often found in the *intestine*, and unless evidence as to the specificity of *T. vaginalis* is beyond doubt, one feels that here at least is a reasonable explanation of the method of infection.

With regard to upward extension of the pathological process, recurrent attacks simulating pyelitis have been common in my experience, but there has been no involvement of the prostate, epididymis, or testis. Cases of prostatitis have been described in the literature, but I doubt if this occurs, since microscopical examination of prostatic fluid (obtained after previous posterior irrigation with two pints of normal saline) always yielded negative results even in the very chronic cases. The possible admixture of anterior urethral pathology with prostatic fluid due to the common, and to be condemned, practice of "milking" the penile urethra after prostatic massage has, I believe, led to such erroneous conclusions. The rarity of stricture (in only one case was a possible previous history of gonorrhoea obtained) is surprising when one considers the chronicity and the marked destruction of the urethral epithelium in this

infection. In my opinion this indicates that the infection is localized purely in the mucous membrane, the submucous coat being unaffected. Concomitant gonorrhoea I have not seen, although I have examined gonorrhoeal pus by the dark-ground method on numerous occasions.

Description of the Condition

The incubation period is about three to four weeks, and the first sign is a feeling of irritation and itching in the anterior urethra. This is followed in 24 to 48 hours by a urethral discharge. On inspection the meatus is of a dull hyperaemic type rather than the brightly inflamed one found in acute gonorrhoea. The discharge, although abundant, is not so profuse as in Neisserian infection, and it has a characteristic "watered milk" appearance, due probably to the high proportion of epithelial cells relative to pus cells in the discharge, and this colour is in marked contrast to the yellowish pus of a true gonorrhoea. Dysuria is absent, and frequency is not a pronounced feature. Urgency I have not seen, even when the 2- or 3-glass test suggested upward extension. The appearance of the urine is rather typical. It is hazy, with innumerable small flakes or specks, this again being an indication of the denudation of the surface epithelium which is so common a feature in these cases. The subsequent course of the infection is one of great chronicity, characterized by waxing and waning of the objective signs and the microscopical picture as indicated earlier in this paper, whether treated by the many methods advocated or merely just allowed to go without any treatment. I am convinced that the discharge may be so slight that the presence of the infection is completely overlooked during the resting-phase period, leading to false optimism of cure until some factors, at present unknown, provoke a recurrence of the discharge. The chronicity of the infection is well illustrated by a case at present under my care, in which everything points to an infection contracted nearly four years ago and which has recurred with monotonous regularity over these years. It may be urged that there is the possibility of reinfection in this case and that the previous attacks may have been Neisserian, but the history of the condition since its origin leaves me in no doubt that the original infection was due to *T. vaginalis*. Other cases observed over two years also lend support to this view. The above description applies to the usual course, but I feel that there are many cases in which the initial infection is so slight that it is entirely overlooked by the patient, until conscience, after an exposure, leads to self-inspection and a slight morning gleet is discovered: examination at a V.D. centre dubs these cases as "urethritis," which leads to frequent attendances and many investigations, and often the correct diagnosis is missed unless the pathology of this disease is thoroughly understood.

It remains for the pathologists to discover the method whereby the *T. vaginalis* can be identified with certainty during its resting phase, as with experience I am finding that cases which showed many active organisms at one visit have for periods up to two months—as one at present under my care—shown nothing but the resting phase. Lack of time has prevented me from devoting much attention to this aspect of the disease. One last point in the clinical description of these cases is that in patients with a long prepuce the preputial mucous membrane sometimes shows the typical salmon-pink appearance often found in the female vagina. Urethroscopic appearances have varied in my hands and, so far as I can judge, there is nothing typical to be seen.

Treatment

Like all chronic conditions, especially when subject to remissions, one finds a multiplicity of "cures." Personally I do not think that at the moment we can claim to have any specific treatment for the condition, since, although many methods advocated do bring about amelioration of the signs, the propensity to relapse is similar to that in the female even when no further exposure is possible. It is essential, therefore, to prolong surveillance over many months, and in my hands the results to date of all treatments, including penicillin and the sulphonamides, have been most disappointing. Recently the administration of mepacrine hydrochloride, both by the usual dosage and by the intensive method now employed for malaria, has been tried, but although the discharge decreased to a very slight amount and the active organism disappeared from the discharge, the tell-tale resisting cell could still be found on careful search. That drug will, I believe, prove a failure, too, when subjected to the test of long surveillance.

Summary

The results of over two years' investigations and observation of cases of *T. vaginalis* infection in the male are presented above, and although it is only one part of the problem of "urethritis" its importance is stressed, since it has led to frequent invalidism and hospitalization, and the condition is as yet only dimly understood.

HERPES ZOSTER AND CHICKEN-POX

BY

JAMES TAYLOR, C.B.E., M.D., F.R.C.P.

Consulting Physician to the National Hospital, Queen Square, and to Moorfields Eye Hospital

Herpes zoster is a condition which has excited interest at various times. It has been noticed to occur in epidemic form, and, as one friend in a large general practice observed to me, "If I see one case of herpes I always expect to see several."

Some years ago it was believed—and the belief was shared by that great clinical observer Sir Jonathan Hutchinson—that second attacks of herpes never occurred. This view is no longer upheld. Some years ago I saw at Moorfields a patient with herpes zoster. On being told that the condition was "shingles" he said, "Oh, I had an attack of shingles 18 years ago on my neck." On examining his neck I found the scars of what must have been a pretty severe attack of herpes. I also saw with Dr. Robertson Fullarton a patient with severe post-herpetic pain in the face. This patient had had an attack of intercostal herpes a year before. I saw, too, with the late Dr. Lewis of Hampstead a lady with facial herpes who a year earlier had had an attack of occipital herpes for which Dr. Lewis had attended her.

Herpes, it will be seen, occurs in several regions. The intercostal is probably the commonest, and the cases I have met with in children have all been in this area. It should be mentioned, however, that the condition is never so painful in children as in adults, and the post-herpetic pain, so often very troublesome and persistent in the latter, is usually slight and of brief duration in the former. Besides the intercostal area almost any other nerve area may be the site of herpes, such as the shoulder, the neck, the buttock or thigh, and the face. When it occurs in the face area there is always danger of affection of the conjunctiva and subsequent impairment of vision. In one patient whom I saw with Dr. Melvill Green—the most severe case I have ever seen—three areas were simultaneously attacked—the face area, the shoulder area, and the intercostal. This patient did not recover.

In 1917 Dr. W. P. Le Feuvre published a paper dealing with the association of herpes and chicken-pox, and summed up by urging that herpes, on account of the close and probably causal connexion between the two diseases, should be a notifiable disease. In four years he took notes of 7 cases of chicken-pox in children following herpes in a parent. Three of these cases occurred in his own practice, the others he met with accidentally. He refers to 17 cases noted in the correspondence columns of this *Journal* between May and Oct., 1913, and reference is also given to a paper read by Dr. Bokay at the International Congress of Medicine at Budapest in 1907 in which 9 cases were described similar to those mentioned. These cases, together with two of his own, were published by Dr. Paul Heim in the *Berliner klinische Wochenschrift* in Dec., 1912.

In an analysis of the cases seen or published Dr. Le Feuvre notes three classes: (1) chicken-pox in one individual apparently contracted from herpes in another—41 cases; (2) herpes in one individual who had been in contact with a patient with chicken-pox—5 cases; (3) herpes and chicken-pox occurring simultaneously in the same individual. He also mentions several cases in which a parent the subject of herpes had been warned to look out for chicken-pox in the children. In these cases confirmation of the justice of the warning occurred usually in 14 days.

Some years ago I published (Taylor, 1920a) a paper in which I recorded some cases showing the apparent connexion between herpes and chicken-pox. In a subsequent paper (Taylor, 1920b) I returned to the subject, and reference is there made to several cases communicated to me by the medical men who had observed them. In the years that have since passed I have had several experiences confirming the close association of the two diseases, and I have been impressed by the fact that very often isolated vesicles quite indistinguishable from those of chicken-pox will be found in different parts of the body in patients suffering from herpes. It was no doubt an extreme case of this nature which justified Dr. Le Feuvre in describing the third class of these cases—herpes and chicken-pox occurring simultaneously in the same patient.

There certainly seems to be a strong case for adopting Dr. Le Feuvre's suggestion for making herpes a notifiable disease.

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RAT-BITE FEVER DUE TO CAT-BITE

SATISFACTORY RESPONSE TO PENICILLIN AFTER FAILURE OF ARSENOTHERAPY

BY

G. I. M. SWYER, B.M., D.Phil., M.R.C.P.
R.M.O., the Royal Masonic Hospital

Rat-bite fever (sodoku), though common in some parts of the world, is a rarity in this country; even when cases occur here they are less likely to result from the bite of a rat than from that of another animal, most often the cat. The following report of a case of cat-bite fever is thought worthy of record, especially as it presented some striking, though less generally stressed, clinical features, and was cured by penicillin after the repeated failure of arsenotherapy.

Case Report

First Admission.—A lieutenant in the Royal Engineers, aged 36, was admitted to the Royal Masonic Hospital on Jan. 2, 1945, complaining of intermittent feverishness since Dec. 24, 1944. His history included one attack of benign tertian malaria in 1935 and two attacks of sandfly fever in 1940 and 1944 while in the Middle East.

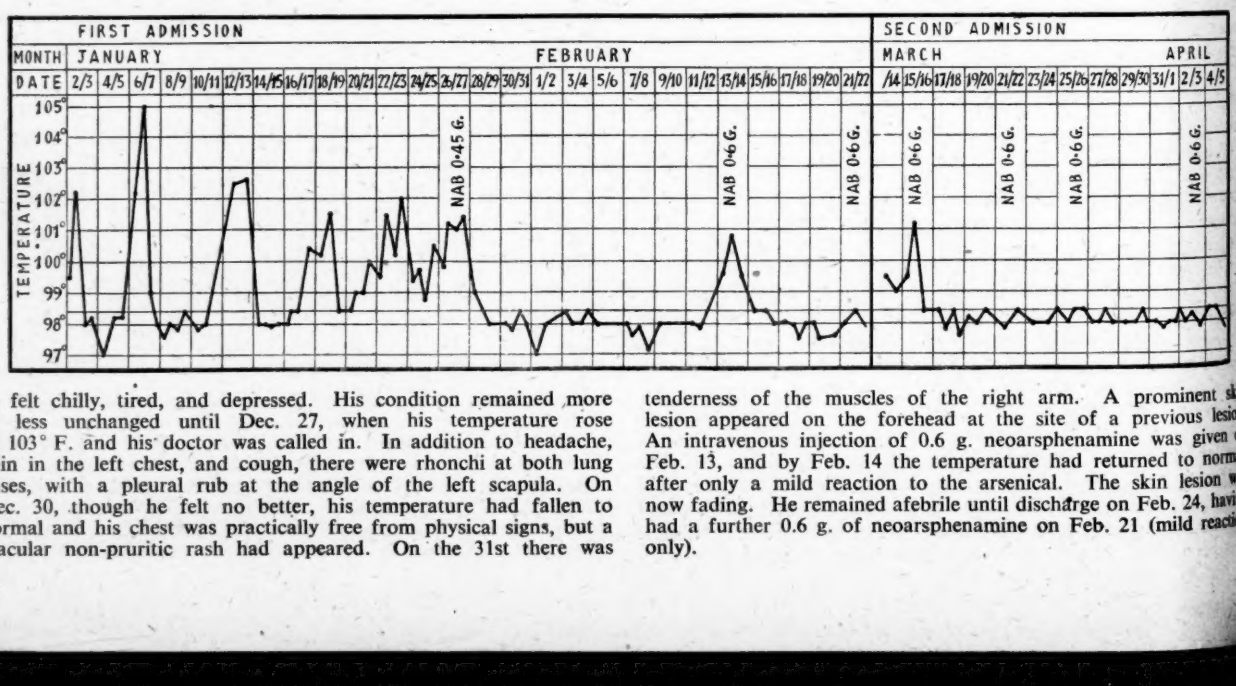
During the first week of Dec., 1944, while in Taunton, he was bitten on the middle finger of the left hand by a kitten. The wound bled somewhat, and he applied a strong solution of iodine within a short time. Some desquamation followed, which he attributed to the iodine, but within four or five days the wound had healed completely. On Dec. 24 he suddenly began to feel very tired and generally unwell. The finger became painful and inflamed, and he complained of soreness over the left side of his chest, with pain in the left axilla and supraclavicular region; temperature over 100° F. He took to bed. Next day the temperature had fallen to normal by noon, but his appetite had gone, and by the evening he felt chilly, tired, and depressed. His condition remained more or less unchanged until Dec. 27, when his temperature rose to 103° F. and his doctor was called in. In addition to headache, pain in the left chest, and cough, there were rhonchi at both lung bases, with a pleural rub at the angle of the left scapula. On Dec. 30, though he felt no better, his temperature had fallen to normal and his chest was practically free from physical signs, but a macular non-pruritic rash had appeared. On the 31st there was an exacerbation of symptoms, with a rise of temperature to 103° F. and pain in the upper jaw, associated with some swelling of the gum around an upper molar. By Jan. 1 his condition had further deteriorated and some blood was observed in the sputum. A few scattered rales were heard over both lungs posteriorly. Next day he was sent into the Royal Masonic Hospital with the tentative diagnosis of pleurisy.

On examination the patient looked ill; his face was flushed and he perspired profusely. There were several roughly circular reddened urticarial patches, averaging 2 to 3 cm. in diameter, scattered irregularly over the body, mostly on the neck and shoulders, with a few on the forehead, trunk, and extremities. They blanched on pressure and showed slight central vesiculation. An enlarged tender lymph node was palpable in the left axilla, and there were also a smaller left epitrochlear and a left supraclavicular node. The fauces and posterior pharyngeal wall were somewhat reddened; the tongue was clean and moist. Apart from tenderness in the left pectoral muscles the chest presented no abnormalities, and the cardiovascular system was not abnormal. The spleen was felt two finger-breadths below the costal margin; it was not tender. The C.N.S. presented no abnormal signs. The healed cat-bite could be seen; it did not appear to be inflamed.

Investigations.—Chest radiographs: No lesion seen. Blood count: Erythrocytes, 4.5 millions per c.mm.; Hb, 87%; C.I., 0.96; mean cell diameter, 7.17μ; leucocytes, 5,000 per c.mm.—neutrophils 2,950, eosinophils 100, basophils 0, lymphocytes 1,750, monocytes 200. No malaria parasites or pigment seen. Urinalysis: Sp. gr. 1010, reaction acid, no albumin or sugar; trace of acetone. Blood cultures taken on Jan. 3, 6, and 12 grew no organisms after seven days' incubation. Cultures from skin lesions grew only *Staph. albus*. Stool negative. Blood W.R. negative. Routine agglutinations to enteric and dysentery organisms, and to Brucella, within normal limits.

The course of the fever is adequately shown in the accompanying chart. During the febrile periods there was an exacerbation of symptoms, with anorexia, nausea, and increased prominence of the skin lesions. On the fourth day after admission he had a rigor, and tepid sponging became necessary next day because of a rise of temperature to 105° F. With the recurrence of fever on the 10th day after admission stiffness occurred in the arms and legs, which felt as though they were swollen, though no swelling was detectable. This symptom persisted for many days. Examination of the patient at this time revealed a picture similar to that on admission, except that the spleen was no longer palpable and the lymph nodes were smaller and not tender. Blood examination for spirilla (direct film) while the temperature was elevated (16th day) was negative. During the next febrile period blood was inoculated into some mice, while scrapings from the skin lesions were inoculated into others; about a week later the mouse blood contained organisms morphologically indistinguishable from *Spirillum minus* (Carter). Neoarsphenamine, 0.45 g., was then given intravenously; next day the temperature fell to normal, accompanied by profuse sweating, nausea (with vomiting on one occasion), and a widespread macular rash on the trunk and arms. This last had the general appearance of a drug eruption, and was presumed to be due to the arsenic.

The patient remained afebrile for the next 15 days. He felt rather unwell for two days after the arsenic injection, but soon became symptom-free, while the drug rash and the specific skin lesions rapidly disappeared. On Feb. 12, however, the temperature began to rise again; symptoms were slight, and included some tenderness of the muscles of the right arm. A prominent skin lesion appeared on the forehead at the site of a previous lesion. An intravenous injection of 0.6 g. neoarsphenamine was given on Feb. 13, and by Feb. 14 the temperature had returned to normal, after only a mild reaction to the arsenical. The skin lesion was now fading. He remained afebrile until discharge on Feb. 24, having had a further 0.6 g. of neoarsphenamine on Feb. 21 (mild reaction only).



On March 9 he appeared quite well, but stated that he had been having attacks of paroxysmal tachycardia, especially at night, each lasting about an hour. His pulse was 110.

Second Admission.—On March 14 the patient was readmitted, complaining of pain, stiffness, and swelling in his right arm of four days' duration. The first symptom noticed was tenderness of the muscles, beginning with the right biceps but later spreading to the forearm and shoulder muscles. This was followed shortly by increasing swelling of the muscles, with accompanying pain and stiffness. On examination he did not look ill, but his face was flushed and his skin hot and moist. There was marked brawny swelling of the right forearm and arm, most pronounced in the biceps region. The whole arm was very tender, and movement of the limb caused great pain. There was some tenderness, though very little swelling, of the shoulder muscles. A blood count on March 15 revealed 11,000 leucocytes per c.mm.—neutrophils 8,910, eosinophils 110, basophils 0, lymphocytes 1,430, and monocytes 550; Hb 87%.

Neoarsphenamine, 0.6 g., was given intravenously on March 15 and the temperature rose to 101.2° F., but next day it had fallen to normal and remained so. The swelling of the right arm subsided rapidly; by March 19 it had disappeared, and movements of the whole limb were free and unaccompanied by pain, but there was still a little tenderness on deep pressure over the biceps. Further injections of neoarsphenamine, 0.6 g., were given on March 21, 26, and April 3. With the help of ferrous sulphate, 3 gr. t.i.d., and ascorbic acid, 50 mg. b.d., his haemoglobin had risen to 100% by April 5. He was discharged on April 6, apparently in good order.

He was seen as an out-patient on April 18. In the previous three days there had been some return of myositis in the right biceps, the right quadriceps femoris, and both gastrocnemii. There was not much pain or swelling, and constitutional symptoms were absent. Neoarsphenamine, 0.6 g., was injected intravenously. On April 25 he was seen again and felt quite well. The myositis had disappeared within a day or two of the injection. Another intravenous injection of 0.6 g. neoarsphenamine was given, and a week later (May 2) a final one of 0.6 g. He claimed to be feeling perfectly well.

Third Admission.—On May 22 he was readmitted with pain in the left calf, both thighs, and the left posterior cervical triangle, gradually increasing over the past eight days. Since May 18 he had noticed increasing swelling in the right thigh and the lower part of the left calf. He had had severe headache and had observed tachycardia. On examination he looked rather unwell. Both thighs were tender to palpation, with firm diffuse swelling on the right side. There was a firm tender swelling of the lower end of the left calf. The arms were unaffected. There was also a similar swelling in the left posterior cervical triangle. No other abnormalities were detected. Bood count : Hb, 108% ; leucocytes, 7,000 per c.mm.—neutrophils 5,740, eosinophils 140, basophils 0, lymphocytes 840, monocytes 280.

On this occasion he was treated with penicillin, 15,000 Oxford units three-hourly by intramuscular injection for five days (total, 600,000 units). The temperature on admission was 100.8° F., and it rose next day (after starting penicillin therapy) to 104° F., but within 24 hours it had fallen to normal and remained so. The myositis subsided rapidly, and within four days he was feeling perfectly well.

Discussion

Many of the manifestations of this case conformed more or less to the classical picture and need no further comment. Attention, however, may be drawn to certain less generally recognized features. Thus, the comparative lack of inflammatory changes at the site of the original bite is at variance with the usual description, most authors emphasizing the severity of these changes, as also the attending lymphangitis. It is stated, too, that the inflammation is apt to relapse and remit with the fever, but in the present case, though there was some slight initial inflammation, this soon subsided and did not recur. Splenomegaly is not generally described as occurring in this disease ; it was only transitory in this case and, as a matter of fact, led to some confusion in the diagnosis. But by far the most aberrant and striking feature was the severe and recurrent myositis. Whether this is really a rare accompaniment of the disease I am not in a position to state, but there can be no doubt that observers are unfamiliar with it. Beaumont and Gill (1935) seem to be the first to describe this myositis. In their case the patient was a 9-year-old girl who developed oval tender masses in various muscles, but at no time was the myositis so severe as in my patient on his second admission. Almost as remarkable as the myositis was the rapidity of its subsidence after injection of neoarsphenamine and after treatment with penicillin.

Although it is well known that rat-bite fever, when untreated, is liable to persist for many months, its tendency to relapse after arsenical treatment is much less commonly recognized. Most textbooks state that one to three injections of neoarsphenamine usually suffice. In the present case the inadequacy of three injections, or even of a further seven, requires no emphasis. The decision to use penicillin was based on the report of its success in treatment of experimental infection of mice with *Spirillum minus* (Lourie and Collier, 1943), and with *Spirillum minus* and *Streptobacillus moniliformis* (Heilman and Herrell, 1944 ; quoted by Herrell, Nichols, and Heilman, 1944). It would appear that the present paper is the first record of the clinical use of penicillin in *Spirillum* infections.

Apart from the case of Beaumont and Gill, already mentioned, which was also due to a cat-bite, very few similar cases have been recorded in the literature ; Laverick (1936) and Cole (1936) each described one case, while Yamamoto (1938) recorded two. The last-named was able to isolate spirilla from both patients, and Cole demonstrated the organisms in a guinea-pig after inoculation with a lymph-gland extract from his patient ; the other authors failed to isolate the organisms.

Finally, some comment on the name "rat-bite fever" or "cat-bite fever" seems justifiable. Neither of these names is satisfactory, nor is sodoku, which merely means "rat poison" in Japanese, because these two animals are not the only vectors of the disease, which remains the same, however conveyed. The term "spirillosis" is suggested as being less objectionable than others hitherto proposed.

Summary

A case of so-called rat-bite fever following the bite of a kitten is described. Some aberrant features are discussed, especially the occurrence of severe myositis, repeated relapse after arsenotherapy, and apparent final cure by means of penicillin. A plea for the use of the term "spirillosis" in preference to "rat-bite fever" or "cat-bite fever" is made.

My thanks are due to Dr. H. B. Russell for permission to publish this case.

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Medical Memoranda

A Case of Acute Dilatation of the Stomach

I recently met with a case of this rare condition, which occurred spontaneously in a woman aged 62 in apparently good health, actively engaged in domestic work, and which seems to be worthy of notice.

Clinical History

I was visiting the house to see a sick child on March 31, 1944, and saw the woman, who made no complaint regarding her own health. The next day she remarked to her daughter, who was out all day on war work, that she was not feeling well. On April 2 she said that she had vomited during the night. She had some hot milk and tea; later, feeling better, she came down and had some bread-and-butter and tea. She went to bed at 6.30 p.m., complaining of great thirst. She took some milk, half a siphon of soda-water, some more milk, and a little whisky.

Her condition became so alarming that I was sent for at 9.30 p.m., and found her suffering from profound shock. The extremities were cold and cyanosed, and the pulse was imperceptible at the wrist and in the brachial artery. On auscultation the heart sounds were weak—rate 120, regular. Abdominal palpation at once revealed the diagnosis: the stomach extended down to the pelvis, succussion was easily obtained, there was no visible peristalsis, and the tongue was dry. She complained of great thirst. Hastily I went home two and a half miles for funnel and tube, and the district nurse. I gave rectal saline in the left lateral position with catheter and funnel. This the nurse continued while I passed the stomach-tube, in doing which the patient readily co-operated. Without any difficulty, and with very little retching, I siphoned off 4 pints of liquid gastric contents. The patient was much relieved, and asked for a cup of tea, which I refused. The nurse continued to give rectal saline, and as the patient seemed to be definitely improving I returned

home, leaving instructions to the nurse to continue the saline and to give no drink by the mouth. At 3 a.m. I was urgently recalled and found the patient *in articulo mortis*. The nurse had left some hours previously, considering the patient to be well enough to warrant her departure.

Eight hours later I made a partial post-mortem examination. Rigor mortis had set in. On opening the abdomen I found the stomach apparently quite normal in size and position, no sign of injury from stretching being visible on its peritoneal aspect. The musculature was firm and elastic.

COMMENT

I publish this case because the condition is rare and the rapid recovery of the gastric musculature after such extreme dilatation, without apparent injury, seems noteworthy. The cup of tea which she so craved for might have been beneficial, and if intravenous saline had been given, or even the rectal saline persevered with for a longer period, it might have turned the scale and her recovery have ensued.

My previous experience of this condition relates to two post-operative cases, both fatal owing to the diagnosis being made too late, and in neither case was a post-mortem examination carried out. The cause of these post-operative cases has been variously ascribed to the anaesthetic, especially ether; to a kink in the duodenum; to the ileo-colic artery pressing on the duodenum. I believe it is due to the patient having too much drink when propped up in the Trendelenburg position. The stomach is then in an atonic condition and the liquid in it lies heavy, is not absorbed, and therefore does not quench thirst. The patient gets more drink and the stomach sags lower in the abdomen, soon reaching the pelvis; the extreme stretching of the stomach wall causes shock, which is rapidly fatal if not relieved. In neither of my cases was there any evidence of much gas under pressure in the stomach, which has been reported by some observers.

I am not aware, in such cases, of any report of a necropsy in which the stomach wall has been found in its normal position when relieved of the stretching due to the weight of the contents.

C. LL. LANDER, M.B., B.S.,
Hon. Consulting Surgeon,
Prince of Wales Hospital, Plymouth.

The Initial Treatment of Tropical Ulcer

The purpose of this note is to draw attention to a method of treatment introduced in 1939 by Todd which in my own experience has been extremely effective and which apparently is neither widely known nor much used.

METHOD

On admission the patient undergoes a three-day course of local treatment with a saturated solution of potassium permanganate (approximately 5%), followed by the application of iodoform powder. Without any preliminary cleaning, the ulcer is painted freely with the permanganate solution, which is then allowed to dry as much as possible. In some cases there may be undermined skin at one edge of the ulcer, beneath which a collection of pus forms, and it is then necessary to incise the overhanging skin. This can be done quite adequately and rapidly with scissors and without any anaesthetic. The area thus laid bare should also be treated with the permanganate solution. The whole surface is then dusted lightly with pure iodoform powder and covered with cotton-wool without any intervening gauze. On the second day any loose sloughs are removed with scissors and the whole treatment repeated. The same procedure is followed on the third day. On the fourth day the ulcer is almost invariably clean and covered with healthy granulations, and no sloughs remain. Only in rare instances is it necessary to repeat the treatment more than three times, and I have not yet seen a case which has not been clean and healthy after six treatments. The subsequent treatment can be conducted on any of the familiar lines with antiseptic ointments, occlusive dressings, or skin-grafting.

The advantages claimed for this method of treatment are: (i) It is simple and can be carried out satisfactorily by a native dresser after two or three demonstrations. (ii) It cleans up even the most septic ulcers more rapidly than any other method which I have yet used. (iii) It requires no anaesthetic such as is necessary for curettage or excision. (iv) It is reasonably economical. (v) While of use in all cases of tropical ulcer, it has been found to be of especial value in ulcers in which the tendons are exposed and grossly swollen and which are very slow to respond to other lines of treatment; also in the acute and rapidly spreading type of ulcer. In the latter case the spread is arrested almost immediately.

The method outlined above differs from that originally described only in that pure iodoform powder is used instead of a 20% iodoform dusting powder. I have found the former more effective.

FRANCIS E. STOCK, M.B., B.S., F.R.C.S., D.T.M.&H.,
Medical Officer, Colonial Medical Service, Nigeria.

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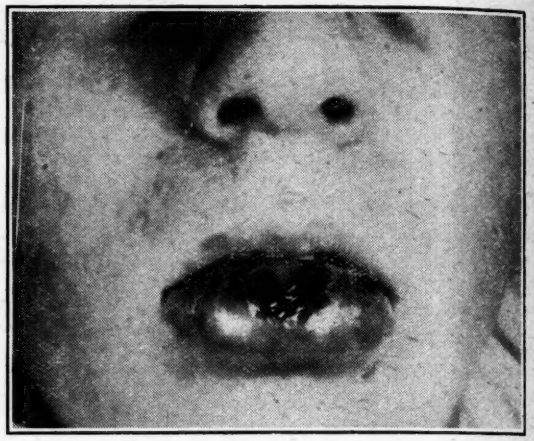
A Case of Rat-bite Fever

The following case appears to be interesting enough to warrant a report.

A youth aged 18 was awakened one night by a rat, which, before he was aware of what was happening, bit his lip twice. There was considerable bleeding at the time, but the wound healed rapidly and he continued in his usual health. Some ten days later the bitten area swelled, became very painful, and signs of general infection appeared, with headache, backache, rigors, and sweating bouts. He was admitted to hospital 18 days after the bite, the above symptoms having continued. On admission the lip was grossly swollen and very painful, with a large black slough marking the site of the bite (see Fig.). There was marked tender enlargement of the lymph



nodes in the neck and in both axillae. He appeared ill, had a temperature of 101 to 103°, and was subject to frequent rigors. There was no rash or splenic enlargement. A blood count showed: R.B.C., 4,690,000; haemoglobin, 88%; W.B.C., 7,600, of which 66% were neutrophil polymorphs, 31% lymphocytes, and 3% monocytes. The Wassermann reaction was negative. On these findings a diagnosis of rat-bite fever was made.

Smears from the surface and fluid from aspiration of the lesion showed haemolytic streptococci and *Staph. aureus* only. Lymph-node puncture demonstrated several highly suggestive organisms. Blood was injected into white mice and guinea-pigs. While no growth was obtained from the former, in peritoneal exudate from the latter Dr. H. J. Slade found *Spirillum minus*. A blood culture was negative.

Three paroxysms of fever occurred during his stay. In the third his temperature reached 104.6°, when he was given 0.3 g. of N.A.B. Next morning it had sharply fallen to normal. His lip rapidly healed, the glandular enlargement resolved, and he was discharged well a few days later.

R. B. THOMPSON, M.D., M.R.C.P.
Royal Victoria Infirmary, Newcastle-upon-Tyne.

Unusual Termination of Intestinal Obstruction due to a Gall-stone

The following case seems worthy of putting on record on account of its rarity.

On Dec. 20, 1925, I was called to see a woman, 60 years of age, with a history of intestinal obstruction for 8 days. The onset was heralded by pain in abdomen and repeated vomiting, and for about 5 days no nourishment of any kind was retained. The bowels refused to move, and repeated enemas produced no result. The vomiting and pain then ceased and sips of water were retained, but the bowels remained costive and no wind was passed. On examination the abdomen was not much distended, no tenderness was elicited, the pulse was good and not quickened, the tongue not too dry, and thirst, thanks to the sips of water, not marked. She was a fat woman, in comfortable circumstances, living a sedentary life.

She had undergone vaginal hysterectomy in 1920, and had a recto-vaginal fistula. There was no history of colic or jaundice. The woman stated that she had never any trouble with digestion and always fed well.

She was admitted into hospital and a sigmoidoscope passed to the fullest extent. A faint click was felt and heard and a stone was seen. The sigmoidoscope was withdrawn, 1/2 c.cm. of pituitrin injected, and an enema given. A few minutes later the bowels moved, bringing with the faeces a large single stone, the shape of a gall-bladder very much enlarged. It was of light weight and speckled. Presumably it was formed without infection, and left the gall-bladder through a perforation into the bowel without causing any signs and symptoms felt by the patient. This, however, is not unusual with these single stones. The woman is alive and active for her age.

Newtown, Waterford. A. J. D'ABREU, M.B., F.R.C.S.Ed.

Reviews

SEROLOGICAL REACTIONS, AND THE FORMATION OF ANTIBODIES

The Specificity of Serological Reactions. By Karl Landsteiner, M.D. Revised Edition. With a chapter on Molecular Structure and Intermolecular Forces by L. Pauling. (Pp. 310. $5.00, or 28s.) Massachusetts: Harvard University Press; London: Oxford University Press.

Immuno-Catalysis. By M. G. Sevag, M.D. With preface by Stuart Mudd, M.D. (Pp. 272. $4.50, or 25s.) Springfield and Baltimore: Charles C. Thomas; London: Baillière, Tindall and Cox. 1945.

The first edition of Dr. Landsteiner's book was published in 1936; the present edition was completed textually by him before his death in 1943, and has been left as it was except for minor changes in the structure of sentences. The new edition follows the general plan of the first, but two new chapters have been added: one on antigen-antibody reactions and one on molecular structure and intermolecular forces, by Dr. Linus Pauling. With these additions the book gives a complete account of the theoretical aspects of serological reactions brought up to 1943. As before, the specificity of proteins, modified by methods such as treatment with iodine or nitric acid, is dealt with in Chapter II, and the specificity of artificially conjugated antigens, such as those made by coupling proteins with diazonium compounds, is dealt with in Chapter V. This separation is somewhat artificial, but it brings out the relative importance of the two methods in the development of the science of immunology. By the second it was possible to attach to protein molecules a large variety of determinant groups. The wide range of examples given in Chapter V proves how valuable this method has been in showing the influence of composition and structure on specificity. But what was more important was that the method made it possible to demonstrate by the inhibition reaction the specific combination of determinant group and antibody. It looked as though Ehrlich's side-chains had been demonstrated objectively. It may no longer be possible to regard antibodies as broken-off "side-chains," as pointed out in the chapter on the nature and specificity of antibodies. But the modern theories of their formation discussed there are not so very different from that of Ehrlich.

In a way, however, the results obtained with these conjugated antigens gave a false outlook. For in the earlier experiments of this type specificity was determined mainly by the presence of certain characteristic chemical groups; the most effective antigen contained arsenic. But, as is clear in the case of the polysaccharides, specificity of natural antigens depends on the spatial arrangement of a limited number of common groups and the modification of their electronic structure brought about by their environment; Ehrlich's conception of side-chains must be modified. The difference between Ehrlich's and Bordet's theories has largely disappeared. Antigen-antibody reactions can be considered to be a matter of physical chemistry. But Ehrlich wins, for he rightly insisted that the essential stage of these reactions is the specific combination—*Corpora non agunt nisi fixata.* It would be interesting to meet the spirit of Ehrlich and find out whether he thought of those interlocking diagrams of his as representations of actual structures in space or merely as symbols of chemical composition.

As our knowledge of the relation of specificity to structure extends the reactions and cross-reactions of non-protein antigens (which are dealt with, none too clearly, in Chapter VI) and of proteins should become examples of a general theory. It is not surprising that any cell contains several substances which can themselves provoke the formation of antibodies or co-operate in the forming of antibodies. Cross-reactions between two types of cell may be due to the presence of the same antigen in both or to a sufficiently close resemblance between two different substances which they contain. Some of the reactions and cross-reactions of cells—for example, the iso-agglutinins—will continue to affect us intimately; others will find practical application in diagnosis. But as a whole the majority of those described in Chapters II and III and the multitude of others that may be worked out should in time become examples of the relation of specificity to structure and be recorded in tables or by a card system of practical value, like time-tables, but not matter for reading.

Chapter VII gives an indication of the way in which the theories of protein structure and behaviour are beginning to offer explanations of the antigen-antibody reactions, given the specific combination of antigen and antibody which is the essential. The last chapter, by Dr. Pauling, is the clearest exposition yet made of the nature of the intermolecular forces on which this specific combination depends. According to the theories current to-day the antigen acts as a kind of pattern on which the amino-acids of globulin molecules in process of synthesis are assembled or those of existing molecules rearranged. But these theories leave unsolved one aspect of the problem, which has become more puzzling since the work of Schoenheimer has shown that proteins in the body are not stable but in a continuous state of flux. How is it that the pattern can survive and keep up the formation of antibodies for years after its injection?

Dr. Sevag's book also deals with the formation of antibodies. His main thesis is that antigens act as catalysts, with antibodies as end-products of the process, and that the reactions of antibodies with antigens are comparable to the inhibition of enzyme actions by the end-products. This analogy may be justifiable, since both enzyme and immunity reaction depend on specific combination. But it is not an advance; the theories of Breinl and Haurowitz, of Mudd and of Pauling, quoted by Dr. Sevag, take us further towards understanding the formation of antibodies. The book contains a large amount of information about the relation of specificity to structure; the physical chemistry of antibodies and immunity to enzymes. Some of this is rather misleading. The fact that Block considered that the molecular ratios of four amino-acids are the same in the haemoglobin of horse, cattle, sheep, and dog, although these haemoglobins differ immunologically, is advanced as an objection to Bergmann's theory of protein structure; but the immunological differences may be due to differences in the ratios of the other amino-acids. And on page 221 it is stated that "there is practically no difference in the rates of sedimentation of immune and normal globulins ($S = 6.8$ to 7.2×10^{-13})"; while on page 12 Dr. Sevag quotes Kabat's figure of 18×10^{-13}) for the sedimentation constant of antibody in horse antipneumococcus serum.

ACUTE INTESTINAL OBSTRUCTION

The Treatment of Acute Intestinal Obstruction. By Judson T. Chesterman, F.R.C.S. (Pp. 116; illustrated. 10s. 6d.) London: J. and A. Churchill. 1945.

Since the appearance of Wangensteen's book on intestinal obstruction, which introduced some novel ideas on the handling of such cases by intubation of the intestine, there has been a revival of interest in the subject. A small book by Mr. Judson Chesterman has just been published which puts the whole subject very succinctly and forms an excellent introduction to the study of the condition. The author has himself carried out a considerable amount of experimental work on various aspects of intestinal obstruction, and his results are incorporated in the conclusions which he reaches.

Two of the chapters we found of particular interest: the first dealing with the factors which so frequently produce serious, and even fatal, symptoms after the release of the obstruction—a phenomenon which has worried surgeons since surgical treatment was first undertaken. The second special interest was in the chapter dealing with the radiographic diagnosis of acute intestinal obstruction—a method which is rapidly becoming of great importance. This section is illustrated by some carefully chosen and well-produced radiographs. There is also a good description of the suction treatment of obstruction, which correctly gives due weight to the difficulties and contra-indications of the method. In the rest of the book we noted with approval the author's preference for light spinal anaesthesia in the "good-risk patient," and also his advocacy of Lake's tubes in performing Paul's operation on elderly patients, thus doing away with the need for multiple-stage operations. There is a good chapter, too, on neurogenic ileus, both of the paralytic and of the spastic types.

The only criticism we have to offer is that the need for great condensation has led the author on occasions into a rather ambiguous type of composition which requires very careful interpretation before its real meaning is made clear. On the whole, however, the book gives a very favourable impression and can be strongly recommended.

RELIEF OF TENSION

Release from Nervous Tension. By David Harold Fink, M.D. Edited, and with an introduction, by Harry Roberts. (Pp. 246. 8s. 6d.) London: George Allen and Unwin.

As Dr. Harry Roberts says in his foreword, the chapter headings of this book are most intriguing: "Meet the Interbrain," "Let go—a Little More," "Treat Yourself to a Fresh Start." The author seeks to impress upon the public the need for relaxation, in colloquial and sometimes in facetious terms. He does not believe in human instincts and declares with a fine confidence that they do not exist, but he believes in conflict, though not much in unconscious processes. He does stress the fact, however, that you can't have mental tension without bodily tension, and that the secret of happiness is relaxation, both bodily and mental. He may possibly oversimplify the way in which such complete relief of tension may be achieved, but there is no doubt that people can do a lot for themselves in this way.

The medical profession can hardly look upon this book as a serious contribution to science, but it may be very useful to some of their patients. The following extract on massage may give some idea of its style.

"Being massaged is another passive play activity that many people find most soothing. This is as infantile a pleasure as sun bathing, and as fundamentally human, perhaps subhuman, because even a cat likes to be stroked. Massage is scientific fondling. My only objection to massage is the expense, but a gentle massage by an expert is well worth the money. Twenty minutes of brisk rubbing and patting, followed by five minutes of gentle stroking, is good clean fun and fine for the nerves."

Bearing in mind that he is talking about the treatment of the psychoneurotic, he is probably not far wrong.

Notes on Books

Aids to Tuberculosis for Nurses, by Dr. L. E. HOUGHTON and Mr. T. HOLMES SELLORS, is published at 4s. by Baillière, Tindall and Cox. This excellent little book, suitable for the apron pocket, will enable nurses to find their way in the new tuberculosis nursing. Nothing in medical organization is more remarkable than the change that has come over our sanatoria during the last ten years. Active surgical treatment, psychology, and rehabilitation now fill the nurses' thoughts. Her patients are under care for many months at a time, and she must be well equipped to deal with their problems. This book gives a complete summary of tuberculosis, its pathology and treatment, with some excellent illustrations, *x*-ray pictures, and instrument diagrams. The nurse who masters its contents will be well equipped for examination. We should like to be sure that it would be read with equal attention by some senior members of the nursing profession, including those whose own sanatorium experience was very different from the modern outlook described in this book.

The 1944 Year Book of Industrial and Orthopedic Surgery, edited by Charles F. Painter, M.D., is published in Chicago by the Year Book Publishers, and in London by H. K. Lewis and Co. at 18s. The editor is again to be congratulated on having collected in concise and readable form short abstracts from current articles on a wide range of orthopaedic and fracture subjects. The illustrations are numerous and beautifully reproduced. This annual, like its predecessors in former years, should find a ready market amongst orthopaedic surgeons. It can be used as a bedside book, and one can "dip" into it at random and always find something interesting, often with constructive comment by the editor. Subjects which are especially topical are a series of abstracts on the Kenny method of treatment of poliomyelitis; intervertebral disk injuries; the scalenus anticus syndrome; primary bone-grafting for os calcis fractures; and many other topics. The book concludes with a section of about fifty pages dealing with industrial medicine and surgery. In the opinion of the reviewer this would be better omitted and, if necessary, made a separate volume in the series of Year Books.

No. 2 of *Notes of the Czechoslovak Medical Association in Great Britain* (published by the Czechoslovak Research Institute, Fursecroft, George Street, W.1, at 3s. 6d.) opens with a valedictory note headed "1938 to 1945." This editorial includes the following passage: "We salute our liberated countrymen and our gallant Allies! Thus our exile ends, but before we leave for our homes we want to express our affection and gratitude to the British friends with whom we have lived and worked during the course of the gigantic struggle. This spirit will always have our admiration." The Editor of the *Notes,* in saying "au revoir" to friends in Britain, hopes that the collaboration between medical men and women in our two countries is not ending but only passing into another stage.

The report of the Scientific Advisory Board for the year 1944 has been issued under the authority of the Governing Body of the Indian Research Fund Association. Copies, price 1 rupee, may be had from the Secretary of the Association, at the Imperial Secretariat, New Delhi, India. The report runs to 188 pages, and the longest sections are on nutrition, on cholera, on leprosy, on malaria, and on plague. There are also reports of inquiries into indigenous drugs and of a number of miscellaneous researches.

The Civilian Relief Overseas Section of the British Red Cross Society and Order of St. John has issued from 5, Lowndes Street, London, S.W.1, a little *Medical and Nursing Vocabulary in English and Greek* compiled by Miss HESTER VINEY and revised by Dr. N. C. Constantoulis, who writes a brief introduction. The user of the booklet must be able to read Greek characters. Words and phrases have been carefully chosen from those in most frequent use by the majority of Greek people to-day.

Preparations and Appliances

APPARATUS FOR TREATING BED-SORES

Capt. J. F. NEIL, R.A.M.C., writes:

While inspecting a German marine lazarette recently I found in use an unusual method of treating a bad bed-sore, in which the cardinal requirement of treatment (i.e., the avoidance of prolonged pressure on any part) is met by suspending the patient from his anterior superior iliac spines. I thought an account of the case and some details of treatment would be of interest.

Case Report (July 26, 1945).—The patient, a young German soldier, was wounded on May 4, 1945, by a shell fragment in the left knee. The joint became infected and a pyarthrosis developed. He became very toxic and anaemic, and about four weeks ago developed a bed-sore in the sacral region. This failed to respond to the usual treatment, using air-cushions and so on; frequent changing of his position was difficult because his left leg had to be splinted. The patient now has a deep bed-sore involving the medial half of both buttocks, spreading up over both ilio-lumbar ligaments and leaving the sacrum exposed in the centre of the lesion.

Treatment.—Ten days ago the surgeon put him up in the apparatus to be described. A Kirschner wire was put through each anterior superior iliac spine under local analgesia and fitted with the usual stirrup. Both legs were put on well-padded Kramer wire back-splints. He was then suspended

from a Balkan frame by counter-weighted cords passing from the two stirrups and the two splints, over pulleys. His head and shoulders were rested on an air-cushion. He now lies suspended about 3 in. from the bed. The main weight of the trunk is taken by the two wires, and the splints carry only the weight of the legs, his head and shoulders alone undergoing any pressure. The photograph shows all the details of the arrangement. After a little initial discomfort he is now very comfortable, and his only complaint is that he is not able to move about much. The sore is improving and nursing is easy.

Comment.—The surgeons say they have used this method in several cases, and find that six weeks is about the maximum time a man can be left in this position without trouble. They have had one man treated for eight weeks with good results. Sometimes they use wires through the tibial tuberosity as well, especially if there are bed-sores on the legs.

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FOOD CONDITIONS IN POLAND

During the last three years opinion in Britain has swung between exaggeration and extreme underestimation of the degree of scarcity of food in occupied Europe. The result of this uncertainty has been disastrous, as there has been no steady demand for adequate plans for dealing with the crisis that inevitably arose as the fighting ended. The detailed report on food conditions in occupied Poland, published by the Polish Ministry of Labour and Social Welfare,[1] is still worth attention as example of the degree of privation in a large area before the final disorganization began.

After the German occupation all Western Poland and a large part of Central Poland were incorporated into the Reich, while the central and southern provinces formed the General Government. In the incorporated provinces Polish farmers were expropriated and hundreds of thousands of German colonists settled on the land. These provinces were under strict control as the granary of the Reich; but, in spite of the distribution of fertilizers, agricultural machinery, and seeds, and the improvement of the livestock, food production fell below the pre-war level. In the General Government area agricultural production deteriorated still more owing to loss of capital goods and livestock and shortage of fertilizers and draught animals. Before the war Poland exported well under 10% of the food produced, and maintained a mediocre standard of living on the remainder. After occupation the Nazis' requisitions were over 10% of the produce, in spite of lowered production. The inevitable scarcity was worst in the General Government area, for before the war this area had not been self-supporting but had imported food; after occupation it had to meet Nazi requisitions and feed a population swollen by people deported from Western Poland as well as the enemy garrison. There were therefore four ration scales—one for Germans (very similar to that in the Reich); one for Poles in the incorporated areas; one for Poles in the General Government; and one for Jews. The rations for Jews may be dismissed as an extermination ration. In the incorporated area the Poles were allowed about half as much meat, fats, and cheese as the Germans were; in 1942 rations of meat (100 g. per week) and of fats (50 g. per week) for Poles in the General Government were about 30% lower, and the sugar ration (70 g. per week) 70% lower, than in the incorporated area. At the end of 1944 meat and sugar rations had not risen and no fats were allowed to the normal consumer. As no extra cereals or potatoes were allowed, in order to make up for the deficit of animal products, the total of calories provided by the rations in the incorporated area were under 1,500 a day for an ordinary adult and about 1,200 in the General Government; and these rations could not always be obtained. Extra rations were allowed to heavy workers, and at the end of 1943 to their families as well. But even very heavy workers got under 2,000 calories a day. Only those engaged in work of military importance got these extra rations; the vast majority of Poles were rationed as normal consumers. The rations for young children supplied enough calories, though they were allowed skimmed milk only, and in 1943 this allowance ceased at 3 years in the General Government and at 6 in the occupied area. But the calories supplied did not rise with age, and amounted to no more than 758 per day at 10 to 14 years—about one-third of the League of Nations standard. The total protein at this age was 24 g., of which 2.6 g. was animal protein, and the calcium 91 mg. per day.

Throughout the greater part of occupied Europe foodstuffs that supplied over 90% of the day's calories have been rationed, and the official rations have supplied well under 2,000 calories per head per day. This has been known well enough; the uncertainty which has led to wide differences and fluctuations of opinion has been on the possibility of supplementing this scanty fare with unrationed food or by irregular means. It will never be possible to dispose of this uncertainty, because all data about production are untrustworthy, and conditions varied from one place to another and from one family to another. But, as the amounts of food requisitioned from Poland were about double the amounts exported before the war, food must have been scarce, even if production had not fallen below the pre-war level. Until scarcity of food becomes extreme the agricultural population invariably fare better than townspeople; it is probable that the actual consumption by peasants in Poland was more than the 2,000 calories a day calculated from statistics of production. About 70% of Poland's population is classed as "rural," but a large proportion of these are not engaged in producing food—lumbermen, for example—and may have been little better off than the people in the towns.

It is often claimed that people in occupied Europe made up the deficiencies in their official calories through the black market or by eating very large amounts of vegetables. But in an area in which food actually is scarce the black market can only aggravate the privation by causing unequal distribution. Prices in the black market in Poland were so high that the greater part of the population could not buy in it after their stock of disposable property was exhausted; in fact a good deal of the "black" trade was in coupons for meat, which the poorer people sold in return for bread or potato coupons; this trade altered the distribution of calories but did not increase the average per head. As Durig in Vienna pointed out, it was not possible to eat or even to cook enough vegetables (excluding potatoes) to make up a serious deficit in calories, even if enough land could be devoted to producing these quantities. In Warsaw a large number of open spaces were taken for allotments of about 1/12 acre; half were to be sown with potatoes. With a fair yield one of these might provide some 250,000 calories a year, or under 200 calories a day to each of a family of four. But owing to the limited

[1] *Food Conditions in Occupied Poland.* Analysis of the German Food-rationing System in Poland. By Leon Dmochowski, M.D. Published by the Polish Ministry of Labour and Social Welfare in 1944. London.

amount of free space in towns few could benefit from the allotments.

There can be no doubt of the serious undernutrition of the Poles, especially of children, during the period covered by this report. The final stages of the war—bombing and blowing up of railways, appropriation of the remaining transport by the military, consumption of seed and dislocation of harvest and sowing—all have accelerated the scarcity of food in Europe. In the Polish area the expulsion of the German settlers and the flight of Germans from the area east of the Oder will again set farming back. At the end of July the U.S. Office of War Information reported: "... Thousands of people will starve and freeze to death in Europe this winter unless help can be rushed from outside. Tens of thousands of others will be hungry and cold. They will be jobless. If no help were to be forthcoming from the outside, they would almost certainly riot, because the authorities could not enable them to get the vital necessities of life. Without this help they would succumb to disease, because their weakened bodies cannot stand up against further hardship. The economy of Europe has been running downhill fast. Production is already at unbearably low levels. Faced with a continued lack of food and incentive goods for workers, transportation for materials and, chiefly, lack of coal, it would continue to fall steadily. . . ."

Newspaper reports of the terrible plight of the Germans displaced by the Poles west beyond the Oder show that the goddess Nemesis is as remorseless as ever.

INFANT MORTALITY AND SOCIAL CONDITIONS

The causes of infant mortality and the methods by which it may be reduced have been medico-sociological problems of the first importance for several decades. Considerable progress has been made towards a solution, and the rate is now only one-third of that at the beginning of the present century. The continuous fall in the birth rate has made it even more imperative to reduce unnecessary wastage of infant lives, and it is generally acknowledged that a further reduction is possible, probably to one-half of the present level. Infant mortality exhibits associations similar to those of the general death rate—e.g., a progression with urbanization and with the social-class classification of the Registrar-General; but the former is more sensitive to adverse conditions than the latter, and this has led to its adoption as an index of the relative social and economic well-being of a community. Infant mortality has given a good approximation when used as a relative measure of these conditions, though it would be, perhaps, a bold person who gave unqualified support to Hersch's[1] recent contention that it is the best single index of the degree of civilization attained by a country. He stated that a high infant mortality shows a condition of poverty and inferiority, while a low mortality reflects the best hygienic conditions, the greatest advances in medicine, bacteriology, chemistry, public education, and intellectual progress. It has been suggested by Mitra[2] that infant mortality is less sensitive to social conditions than it was 20 years earlier, owing to the large decrease in the rate itself and to an improvement in general living conditions; but it is still highly correlated with social and environmental conditions.

The latest paper on this subject is by Woolf and Waterhouse,[3] who have used the infant mortality during 1928–38 in the county boroughs to assess social influences. Their finding that economic conditions are inversely related to infant mortality is well known and generally accepted, but their conclusions are not so well founded. They were, apparently, so enamoured of their lengthy arithmetical processes that they overlooked the first lesson in statistics—i.e., that correlation is not necessarily causation—and they conclude that "23.1 is the infant mortality that would prevail if our five poverty symptoms would be eliminated." This rate is much below 32.7, the rate for Social Class I, and we may safely assume that poverty was not a factor here. The many factors associated with infant mortality are highly interrelated, and one cannot assess their relative importance; but the authors have allocated one-sixth of the excess mortality to overcrowding, one-quarter to low-paid occupations, one-fifth to unemployment, and one-eighth to the industrial employment of women. Apparently public health workers and authorities have deluded themselves for years by assuming that infant mortality was influenced by complex factors and that medical science and improved mothercraft could affect this rate. But perhaps they were not so largely mistaken, since in 1943 and 1944, when enemy action had made the housing position worse and the employment of women in industry was on a higher scale than ever before, the figures for infant mortality were 49 and 46, the lowest values ever recorded in England and Wales. Between 1911 and 1931 the infant mortality of Social Class V was halved, due, the authors state, to improvement in environment. The mortality of Social Classes I to IV also declined at approximately the same rate, and it seems more reasonable to suggest that a factor independent of social class was responsible for a large proportion of this improvement. That social and economic conditions are of great importance in determining the size of the infant mortality has been established beyond doubt, but curious anomalies exist. For instance, Social Class II in the regions of Wales I and North I had in 1930–2 a larger infant mortality than any class in the South-East (excluding London) with the exception of Class V, which cannot be explained by differences in economic conditions.

Woolf and Waterhouse fail to appreciate the paucity of the data which the pioneer writers on this subject had at their disposal. The indices the earlier writers used were the best available, and they fully realized their imperfections. The use of the proportion of female domestic servants in the female population as an index of the residential nature of a district is not so foolish as the authors would have us believe. They state that "high proportions of domestic servants are found not only in well-to-do areas but also in those poverty-struck places like Newcastle-upon-Tyne and Merthyr Tydfil." In fact the percentage in these towns was only about one-third of that in Eastbourne and Bournemouth. Women in highly industrialized areas, where no opportunities exist for female labour, are not forced by

[1] *Médecine et Hygiène*, 1943, **10**, 1.
[2] *J. Hyg.*, Camb., 1937, **37**, 108.
[3] *J. Hyg.*, Camb., 1945, **44**, 67.

circumstance into domestic service; they migrate, as a comparison of sex ratios would demonstrate. Among other statements that are open to question is the assertion that the use of the correlation coefficient is not valid unless the distribution is normal. The correlation coefficient involves no assumption of normality or indeed of any other type of distribution; it is a measure of linear relationship, being the coefficient of the straight line fitted by the method of least squares when the variables are measured in terms of their standard deviations. In several recent articles dealing with environmental indices the uninformed reader is likely to form the impression that the social-class classification of the Registrar-General is a caste system. This is not wholly true, since there is considerable migration from class to class. At ages 20 to 24 the proportion in Classes I and II in 1930–2 was 74 per thousand; this proportion was trebled by late middle life by promotions from the lower classes. This might be expected, for responsible positions are not generally obtained by young men. The constitution of the social classes varies much between the various regions of the country, and the correlation of general mortality and social-class classification is a feature of the life of large towns; the relationship is less clearly shown by the small towns, and not at all by the rural districts. No one can feel satisfied until infant mortality in this country is down to an irreducible level, but in seeking for the causative factors that may be attacked strict objectivity is needed.

POTASSIUM THIOCYANATE POISONING

The use of potassium thiocyanate for the treatment of hypertension has continued now for many years, though it has not been widespread. Many physicians have remained doubtful of the value of this form of treatment, and others have regarded it as dangerous. Barker[1] in 1936 recommended that when potassium thiocyanate was given the amount in the blood should be determined, so that it could be ascertained that the amount was not too low to be effective or too high to be dangerous. Barker's paper gave an impetus to the use of thiocyanates, for it provided a means of avoiding toxic effects. No certain basis has been established for the mode of action of thiocyanates in lowering blood pressure, though it is known that thiocyanates, as does thiouracil, act on the thyroid gland and so depress the output of thyroid hormone. Since thyroidectomy has been found to be of value in the treatment of angina, it may well be that thiocyanates lower blood pressure by their action on the thyroid gland.

A number of deaths have resulted from the therapeutic use of thiocyanates, and del Solar, Dussaillant, Brodsky, and Rodriguez[2] have now brought the total to seven. Their patient was one among 73 to whom they gave the drug, and they ascribe his death to accidental overdosing, due to the patient's measuring his medicine with a dropper of which he had broken the tip. As a result he took, for 22 days, 0.9 gramme daily instead of 0.6 gramme. At the end of this time the blood contained only 2.5 mg. per 100 c.cm. and the intended dose was raised from 0.6 to 0.9 gramme—but in fact from 0.9 to 1.35 grammes. After six days he developed toxic symptoms, and the administration of thiocyanate was stopped; in spite of this the patient died 16 days later. The symptoms began with clonic contractures of the upper extremities, followed by some delirium and motor incoordination. After four days coma supervened, with tachycardia and Cheyne-Stokes respiration; the presence of a spastic right hemiparesis led to a diagnosis of a toxic encephalopathy. After a temporary recovery of consciousness, when the blood pressure had fallen to 130/90, coma reappeared and the patient died. Post mortem, an area of very recent haemorrhagic encephalomalacia was found in the left occipital lobe. Large amounts (20 to 30 mg. per 100 g.) of thiocyanate were found in the brain, heart, kidney, liver, lung, and muscle. The authors consider that the danger of a toxic encephalopathy may prove to be a contraindication to the use of thiocyanate in elderly persons, since in five other cases similar findings have been recorded.

[1] *J. Amer. med. Ass.*, 1936, **106**, 762.
[2] *Arch. intern. Med.*, 1945, **75**, 241.

ACTION OF MAGNESIUM ON THE UTERUS

The magnesium ion has been shown to possess a powerful depressant effect on all nervous and muscular functions. This is not seen when magnesium compounds are given by the alimentary canal, since the magnesium ion is not absorbed in sufficient amount unless massive doses are given. Magnesium by injection depresses first respiration and then cardiovascular function, with a fall of blood pressure and vasodilatation. It also has a curare-like action on muscle, operating, it is believed, on the neuromuscular junction. Magnesium could, in theory, be employed as an anaesthetic, but its use is limited by the fact that the effective dose is dangerously close to the fatal dose.

Abarbanel[1] has shown that the magnesium ion reduces the spasm of tetanic contraction of the human gravid uterus—an effect also observed in animals by several workers, in particular by S. R. M. Reynolds,[2] who demonstrated that magnesium chloride inhibited the uterine contraction caused by calcium and prevented a further response to it. In small amounts magnesium has no effect on spontaneous, rhythmic uterine contractions. Van Dyke and Hastings[3] had previously shown that magnesium ions, in an optimum concentration, inhibit the response of the guinea-pig's uterus to posterior pituitary extracts. In a case of sustained tetanic uterine contraction with severe abdominal pain, Abarbanel injected 10 c.cm. of a 20% solution of magnesium sulphate intravenously; the tetany and pain disappeared, and the uterus contracted spontaneously and rhythmically. Further work on these lines showed that magnesium abolishes uterine tetany induced by oxytocic drugs, and also prevents the onset of tetany if given a few minutes before or after the injection of an oxytocic drug. Various clinical applications of magnesium are suggested—for example, in the relief of tetanic contraction from oxytocic drugs given to induce labour or during the third stage of labour, in cases of Bandl's ring and abruptio placentae, and as magnesium gluconate by mouth for relief of after-pains. Injection of magnesium alleviates the pain of spasmodic dysmenorrhoea, and taken by mouth daily for two weeks before the onset of menstruation gives considerable relief.

This enthusiastic report must be received with the greatest caution. Abarbanel minimizes the danger of parenteral injection of magnesium salts: severe and sometimes fatal respiratory and vasomotor collapse may occur after their administration. Calcium, the antidote, should always be at hand, but even the prompt administration by the intravenous route of calcium chloride or gluconate may not save the patient's life. Severe sloughing with abscess formation has followed the intramuscular injection of magnesium. The use of magnesium salts in the manner suggested can hardly become a part of obstetric practice until further work has confirmed the value—and, above all, the *safety*—of this method of treatment.

[1] *Amer. J. Obstet. Gynec.*, 1945, **49**, 473.
[2] *Amer. J. Physiol.*, 1933, **105**, 358.
[3] Ibid., 1928, **83**, 563.

AN EDUCATION "WHEREABOUTS"

Owing largely to the circumstances of its historical development, the educational structure of England and Wales is a confusing labyrinth. How many citizens who pay the education rate could pass an examination in the system with credit? It is a dull subject largely because of the number of imperfectly understood and ponderous terms which attach to it. How many could say what is an "excepted district," or what is the "agreed syllabus" or the "dual system," or in what respect a "controlled school" differs from a "voluntary school," or an "aided school" from an "assisted school"? Some terms, fortunately, such as "provided" and "non-provided," have gone into obsolescence with the passing of the Act of 1944. The Ministry of Education has done a real service in issuing a *Guide to the Educational System of England and Wales* (H.M. Stationery Office, 1s.)—60 pages of clear, informative writing, unencumbered by references to sections of Acts or to authorities. It shows the general reader how the new educational reforms will operate, and gives details of those aspects of the old system which will still continue, as scaffolding, while the new building goes up. Every stage of education is described from the nursery school to the university, though the university remains independent of the Ministry of Education, receiving its grants from the Treasury. The way in which the Ministry co-operates with local authorities and the duties of local authorities themselves are sufficiently described. There is also a brief history of English education, with the landmarks of 1870, which saw the beginning of the board school; of 1902, when the council school was created; of 1918 with the Fisher Act; and finally the comprehensive changes brought about by the Butler Act of 1944.

There is a short section on the school medical service, describing how it has been widened under the new Act to cover all children in primary and secondary schools maintained by local education authorities and also, when they are established, in county colleges (institutions provided by local education authorities and attended part-time on a compulsory basis by young people under 18). It is added that the setting up of a comprehensive national health service will eventually ensure that all forms of treatment which school-children require will be available to them through that service, and when that stage is reached it will no longer be necessary for local education authorities to provide treatment generally. Their functions will shrink again to medical inspection and to ensuring that children and parents are properly advised and encouraged to seek, through the new health channels, any treatment the children may need.

THE HOMELESS CHILD

The care of children who have been removed from their own homes is a major problem in this country and is likely to be a very much greater one on the Continent. Before anyone, however, can deal with children's problems he needs to know something about child development. Even the simplest knowledge cannot be taken for granted in a would-be helper. The Provisional National Council for Mental Health has found it necessary to publish a very simple and useful memorandum setting out the A B C of what a child needs.[1] For satisfactory development of the whole personality, it appears, a child depends on a combination of good relationships and individual achievement. Continuity of care by a loving adult is particularly necessary in the earlier years. Where there is a good relationship he absorbs the adult's standards within himself and is able to progress towards self-discipline. Opportunities for interests and activities and the fostering of personal responsibility are necessary for the wise training of children. Training a child for a job is of little value without a social adjustment that makes him spontaneously wish to play his part as a member of the community. The fundamental needs of the child are emotional. In the normal family emotional needs are satisfied with little or no thought. Where an unrelated person has to care for the child a special understanding is required. This is the least that should be demanded, not a fanciful addition to training. The most obvious lack of the homeless child is close personal relations with someone in place of a parent. The next lack, related to it, is a set of standards of his own, a satisfactory attitude to work, and a sense of social responsibility. Placing in a foster-home may and should provide the individual care required and offer a substitute family setting, but its value will be lost if the child is not fully assimilated into the home. Once a child is well placed it is disastrous to move him again. His power to adapt to change throughout his whole life afterwards may be devastated by a rooted feeling of insecurity. Every precaution should be taken to find the right foster-home for the child and to make the necessary adjustments. There is danger to the child's real welfare in placing him in a large group, as may happen in a children's home. Every effort should be made to organize within a large institution groups small enough to allow a personal relationship between each child and a member of the staff. Provision must also be made for individual freedom and responsibility by increasing contacts with the outside world, such as tea with school friends, shopping, and spontaneously joining clubs. The group should contain children of different ages, so that the younger may receive help and the older develop self-confidence. Boys and girls should be brought up in the same homes, and the staff should include men and women. A married couple can give the other members of the staff, as well as the children, a homely atmosphere. Adolescents may need to be separated from younger children when they begin to develop adult interests, and it may be advisable to separate the sexes because of their different needs. Boys and girls should, however, have the opportunity of sharing their activities at all ages. A good foster-home may solve the problem of a maladjusted or physically handicapped child. For difficult children it is better to classify homes according to the facilities they offer and the type of superintendent in charge, rather than by the cases admitted. A child with disorder of behaviour or personality should have his problem thoroughly investigated, and for this purpose it may be necessary to set up a reception centre, which would also be used for children who have broken down after being placed.

[1] *The Care of Children Brought up away from their own Homes.* P.N.C.M.H., 38, Queen Anne Street, London, W.1. See also *Children without Homes.* Proceedings of a Conference called by the Women's Group of Public Welfare. National Council of Social Service, 26, Bedford Square, W.C.1. (2s. post free).

Dr. John Parkinson will give the Hunterian Oration before the Royal College of Physicians of London on St. Luke's Day, Thursday, Oct. 18, at 3 o'clock. His subject is "Rheumatic Fever and Heart Disease."

The Committee of Privy Council for Medical Research has appointed Dr. Patrick Alfred Buxton, F.R.S. (professor of medical entomology in the University of London), and Sir Alexander Fleming, F.R.S. (professor of bacteriology in the University of London), to be members of the Medical Research Council from Oct. 1, 1945.

HOUSING AND HEALTH*

BY

H. NELSON, M.D., D.P.H., D.T.M.

Lieut.-Col., S.A.M.C.; M.O.H. Pretoria

There is overwhelming evidence that when people live in slum districts they develop higher sickness and death rates than when they are better situated. Vital statistics have proved this in the very many field surveys which have from time to time been undertaken in other countries. No such figures have yet been recorded among Europeans in South Africa. We do not even possess correct vital statistics for all non-Europeans, because native notifications are inaccurate. We *have*, however, correct figures for Europeans and coloured people. As the coloureds as a whole are much poorer than Europeans these statistics, though not comparable in every respect, do afford a means of comparing health conditions of the poor and the better-off in South Africa. If figures for Europeans and natives had been available the contrast would have been still greater, because the natives as a whole are still poorer than the coloureds, and from the few figures which we have—inaccurate as they are—there is little doubt that health conditions are much worse among natives.

Some Statistical Evidence

Let us analyse some of the figures for Europeans and coloureds for the year 1938. This year is chosen for no other reason than because it was the year before the war.

The general death rate, which reflects the chances of survival from all causes of death, was 9.48 per 1,000 for Europeans and 23.74 for coloureds. The infant mortality rate—that is, the number of infants who die in the first year of their lives per 1,000 live births—is a very good indication of existing health conditions. This figure for Europeans was 51.69 and for coloureds 165.7 Tuberculosis, a disease directly associated with poverty and bad housing, had a death rate per 100,000 of 38.83 among Europeans and 506.4 among Cape coloureds. Similar conditions are found in all vital statistics of these two sections in South Africa.

From other countries we have the same evidence of higher sickness and death rates among the poor.

In 1928 the infant mortality figures in eight different cities in the U.S.A. were studied and analysed and published in the Public Health Reports of the U.S.A. It was found, on the basis of 23,000 records of birth, that:

(1) The infant mortality rates decreased in direct proportion to the amount of money which the population paid in rent. For example,

Rentals under 15 dollars, infant mortality rate						.. ..	65
"	15–20	"	"	"	"	.. ..	43
"	20–25	"	"	"	"	.. ..	45
"	25–30	"	"	"	"	.. ..	31
"	30–35	"	"	"	"	.. ..	36
"	35–40	"	"	"	"	.. ..	18
"	40–45	"	"	"	"	.. ..	17

(2) The infant mortality rate in families who lived in homes with two or more persons per room was 2½ times that in families from homes with less than 1 person per room.

The M.O.H. of Manchester in 1931 applied to the Corporation for the demolition and clearance of the Hulme slum area. In substantiating his case, and in proof of the fact that the area, on account of the bad state of the dwelling quarters, was injurious to health and should be demolished, he had collected the following statistics.

	City	Slum
General death rate	13·9	21·8
Infant mortality rate	91·0	135 0

and similarly there were higher mortality rates in this slum area from diphtheria, diarrhoea, tuberculosis, diseases of the heart and blood vessels, bronchitis, and pneumonia.

From the very many surveys undertaken it has been established that cerebrospinal fever (meningitis) is closely associated with overcrowding, and in epidemics the incidence rate increases in direct proportion to the degree of overcrowding and amount of space between beds.

Overcrowding and Infection

It must be borne in mind that overcrowding in slum areas does not only mean too many persons occupying a dwelling, though this is of major importance. It also includes overcrowding of buildings in the area concerned, lack of open spaces, the so-called "lungs" of the city, lack of playing-fields, and too narrow streets. Apart from a higher accident rate these all create favourable circumstances for the spread of disease, particularly because such areas are always inhabited by the poorer section of the community, whose vitality is already lowered through the lack of sufficient protective foods, cold, sheer hunger, and all the misery associated with poverty. It is also true that poorer people have more children, which adds to the overcrowding. Under these conditions the human body, lowered in resistance, becomes fertile soil for the reception and cultivation of disease germs, whose power of infectivity is further increased by the herding together in close proximity.

The most common communicable diseases spread by close personal contact are sore throat, bronchitis, pneumonia, influenza, scarlet fever, mumps, chicken-pox, whooping-cough, diphtheria, cerebrospinal meningitis, and tuberculosis. Many of these illnesses are preventable. In most cases, particularly for measles, whooping-cough, diphtheria, scarlet fever, and the other more common communicable diseases, the earlier in life they are contracted the more serious is the prognosis. The first year of life is the most dangerous age for children to become infected, and the danger lessens as the child grows older. Particular care should therefore be taken to prevent any of these illnesses occurring in the early years of life. The chances of such prevention being effective, however, are very much lessened in overcrowded slum areas. The result is a higher incidence among the lower age group with a correspondingly higher death rate.

The City of Glasgow published the following illustrative figures showing the difference in health conditions in homes according to the number of rooms per house. The figure 100 is taken as a comparative number applied to the house of one room (taken from the *Practitioner*, Sept., 1943).

House of	General Death Rate	Pneumonia and T.B. Death Rate	Infant Death Rate	Death Rate Children 1–5 Years
One room	100	100	100	100
Two rooms	64	72	78	74
Three rooms	44	32	61	44
Four rooms	41	38	49	25

The writer who submitted these figures stated that it did not really matter which year was taken for the statistical inquiry; the relative incidence remained the same.

The Lot of the Slum Dweller

The literature is full of similar statistical proof of ill-health and high mortality rate of the poor. Figures unfortunately cannot register the misery, unhappiness, and wretchedness of squalor, cold, and hunger—the lot of the slum dweller.

Think of the discomfort of leaking roofs, absence of adequate bathing facilities, sharing common dirty W.C.s for whose cleanliness no one seems to be responsible, the lack of proper cooking facilities, and more often than not nothing to cook anyway; and then sitting down in overcrowded hovels to a meal with the smell of cooking, with dirty plates and cooking utensils staring you in the face, and the noise of the neighbours coming from all sides. No wonder the sickness and mortality rates are so high. But we only know of the registered figures of physical illness. What of the mental condition of people who grow up in these surroundings? What do they think of the world they live in, and who can blame them if their souls become filled with hatred and animosity? What sort of citizens do we breed under such conditions and what is their outlook on life? Is it a wonder that "civilized mankind" has been plunged into the greatest effort towards exterminating itself that has ever been known in history? The rich have their animosities and hatreds born and bred in greed and selfishness, and the poor have their minds warped by squalor, hunger, and suffering. Strife and bitterness can surely never end until we "liquidate" these factors; and on their liquidation depend the future peace and well-being of the whole world. These, then, are the inescapable and undeniable physical and mental havocs wreaked upon the slum dweller written in the figures which register life and death, and in the incalculable suffering of poverty and misery which can only be measured in terms of drudgery, depression, and mental anguish.

* Paper read at S. African Health Officials' Conference, Johannesburg, Nov. 28, 1944.

No wonder, then, that people in South Africa are anxious to rehouse the poor and to remove the slums. It would, however, be dangerous to seek a solution of this problem by merely providing new houses. It is true that rehousing is a very great factor, but by itself it does not offer a solution. Along with it must come social and economic reconstruction. We must ask what are the most pressing needs of the slum dweller. We do know that people who are badly housed have high mortality and sickness rates. We also know that people who are badly housed are the poorest section of the community. Bad housing is not the only evil which goes with poverty. Inadequate clothing, cold, and sheer hunger apart from malnutrition, are most important factors, and it is useless leaving this problem to those who can think only in terms of dilapidated buildings and overcrowding, and to whom rehousing only means providing new buildings and who think only in terms of bricks and mortar.

The Stockton-on-Tees Object-lesson

McGonigle and Kirby in their book *Poverty and Public Health* (1936) give in detail an example of the folly of looking to rehousing for improving the health of the slum dweller. They describe how the medical officer of health of Stockton-on-Tees once decided to apply to the Council for the demolition of an unhealthy area and for the rehousing of the inhabitants. As the area was too big to be dealt with under one scheme it was decided to divide it into two portions and first to rehouse one group, and to leave the rest until later.

The slums in the one area were demolished and the inhabitants removed to a modern self-contained housing estate. There was no appreciable difference in the original social, economic, and housing conditions between the people removed and those who remained behind. In this way 152 families and 710 individuals were moved to a newly constructed housing estate, and 289 families and 1,298 individuals remained behind. This offered very suitable conditions for the study of the results of rehousing, particularly as a thorough record of the total statistics of the area had been kept prior to the demolition of the one portion.

For the five years before removal of the one area the death rate for the whole of Stockton-on-Tees was 12.32, for the area not demolished 26.10, and for the demolished area 22.91. These figures show a higher death rate for the slum areas when compared with the whole city and a higher death rate in the area undemolished when compared with the area which was cleared.

Records were then kept for the next five years. The death rate for the whole of Stockton-on-Tees came down from 12.32 to 12.07, that of the people left in the slum area from 26.10 to 22.78, but the people who were removed to the new housing estate showed an increase in the death rate of from 22.91 to 33.55! It might be thought that the populations were not similar, and that there was, say, a preponderance of old people in one or other area. This can be dispelled, because all these rates were "standardized" to allow for any discrepancies in the make-up of the populations. There was also no untoward occurrence such as an epidemic in any particular area.

When these facts became evident it was necessary to determine the reason for such adverse conditions among the very people who had considered themselves fortunate in being rehoused in such attractive, new, well-appointed homes and under such pleasant conditions.

The cause was not difficult to find. The rentals in the old slum areas were about 4s. 8d. per family per week and the rentals for the new houses were 9s. per week. All these families were among the very low income group, and an increase from 4s. 8d. to 9s. is almost double. A survey was made of the income of the families in both areas, and it was found to range between 47s. 1d. and 30s. 5d. among the rehoused and 44s. 7d. and 30s. 9d. among those who remained behind. This shows that the income levels were about the same. But the occupants of the new homes were paying about 25% of their already meagre income in rent, and those in the old homes only 17%. To poor people this is a very big item in the family budget. In addition there were also new social obligations involving small extra expenditures among the rehoused. With an average weekly income ranging between 47s. 1d. and 30s. 5d. per family it goes without saying that these families never indulged in luxuries which could now be cut down to meet the increase in rentals. Their clothes already were of the bare minimum, and the only item on which they could save was food. They were actually dying of malnutrition—killed by the kindness of a well-meaning but short-sighted rehousing policy. This story serves as an object-lesson to all who deal with rehousing and slum elimination. It is a dangerous business unless all economic factors are taken into consideration.

A very interesting figure brought to light by this survey was the infant mortality rate. The authors hardly comment on it, but it really is of great significance and adduces further evidence of the importance of nutrition when coupled with rehousing.

Infant mortality was the only death rate which was reduced in the new estate. It came down from 172 to 117.8. As previously mentioned, infant mortality rate refers to deaths in infants under 1 year of age—an age period when for the most part nearly all children live on mother's milk, a perfect food for babies and the cost of which does not figure on the family budget, with the result that the general lack of food did not affect them. This substantiates two important findings. First, that malnutrition must have played a great part in increasing sickness and mortality rates among those over 1 year of age. There was actually an increase of 9.2% in the death rate of children between 1 and 10 years of age! And, secondly, that in the breast-fed and better-nourished infants under 1 year the healthy new surroundings and new homes played a great part in the reduction of the infant mortality rates.

Economic and Social Factors

Rehousing and slum elimination are essential. But what are the most urgent needs of the poor if we think in terms of mental and physical well-being? I would say without hesitation that it is at least as important to provide a sufficient supply of all the essential foodstuffs and adequate warm clothing. This provision must not be a "from-day-to-day hazard; it must be part of a social security system which will provide these basic amenities of life for all those who are prepared to do an honest day's work. It must also provide for the children, for the sick, and for the aged. Such a system will remove the anxiety and mental anguish associated with insecurity. With this there should be adequate free medical attention and hospital provision.

It is essential that *work* should be provided for all. There can be nothing more demoralizing than being on the dole. There should be a remodelling of our economic system. The primary object of production should not be for gain or exportation but to meet demands and provide the people with what they need. This would secure lasting employment for everybody, with incomes, and with goods to buy with these incomes.

Any attempt to increase wages without price control or, what amounts to the same thing, without control over the supply and demand factors, is merely the beginning of another vicious circle. We must have adequate wages, but we must also see that labour is directed towards the production of the things we need most. It is only in this way that the wages of labour will have a purchasing power which will at least permit of sufficient food and clothing as well as satisfactory housing. But we must not let housing by itself be considered as priority No. 1; other factors are at least as important.

I do not desire in any way to detract from the importance of and necessity for decent dwelling-houses. There is no doubt whatsoever that slums and bad housing are factors of the utmost importance in causing ill-health and disease. But they are not the primary factors. It is good that slum dwellers should be rehoused, but it must be ensured that the rentals of the new houses are not more than those of the old, and that persons rehoused will at least have sufficient money left after paying rent to provide for other essentials.

A Problem to be Tackled as a Whole

My main point is that we must not take for granted that rehousing is a cure for sickness among the poor. Unless the whole problem is tackled by a combined team of engineers, town planners, architects, social welfare workers, doctors, health inspectors, health visitors, qualified housing managereses, economists, and medical officers of health the problem does not receive the attention which is necessary to attain the desired result.

Are we doing this in South Africa, or does rehousing to us still only mean putting people into new structures? Perhaps we *are* "*considering*" all these factors, but it cannot be said that there is a co-ordinated effort for its practical application. How can we have full co-operation when housing is dealt with by municipalities, and economics largely by the central Government? The production of foodstuffs is regarded as practically a purely agricultural problem, whereas we know that it can receive full consideration only from the point of view of what

should and could be grown and distributed most economically in terms of "food value" for the people, when studied by a team of agriculturists, economists, veterinarians, and doctors.

It is quite evident that this question of health and housing is a problem which goes much further than most people realize. It requires to be viewed from a new angle and in its broadest aspects. It can be adequately dealt with only by a combined effort, based on knowledge and understanding.

THE R.A.F. MEDICAL SERVICE, 1939–45

On the formation of the Royal Air Force in April, 1918, medical officers who had served with the Royal Naval Air Service and the Royal Flying Corps were transferred or attached to the new Air Force and were granted R.A.F. ranks in November of the following year.

Although there were 415 officers in the medical branch when it was formed this number had dropped to 132 by the end of 1919, and the figure fluctuated with the rise and fall in strength of the Royal Air Force between the two wars. The formation of the R.A.F.V.R. in 1937 enabled a reserve of medical officers to be built up totalling 175 medical officers at the outbreak of war. The total strength on the same date was 554, including 91 officers from various reserves and the retired list. Recruitment for the R.A.F. as a whole had not reached any large proportions and the ratio of medical officers per 1,000 personnel was 4.5. This fell to 2.18 per 1,000 personnel by September, 1941, remaining practically at that level throughout the war.

The medical officers were faced with a formidable variety of duties, and lack of experience in total warfare placed an additional and unknown burden on them. The existing medical organization had to be expanded smoothly and rapidly, and facilities provided for the medical examination of entrants at medical boards all over the country. Health had to be maintained and sickness and disease prevented. Wounded had to be healed and rehabilitated and returned to their Service duties as quickly as possible, and the statistical organization had to be greatly expanded.

Organization

The R.A.F. Medical Services are in the Department of the Air Member for Personnel and are headed by the Director-General of Medical Services. The chain of medical liaison and control is maintained by the Director-General and his staff in the Medical Directorate through principal medical officers and senior medical officers down to the medical officers of units. The unit medical officer is a vital link in the chain. Being in close touch at his station or squadron with the practical problems of unit or station life he must maintain a constant watch over the physical and psychological health of all aircrews. All medical officers are givea a series of lectures and demonstrations by experts on the psychological health of personnel. Psychologists visit stations and discuss problems with the unit medical officers and also explain to the squadron commanders the common-sense approach to the psychology of aircrews.

Sick Quarters and Hospitals

In 1940 there were seven R.A.F. hospitals at home and two abroad; by the end of 1944 there were 26 R.A.F. hospitals at home and 13 over-seas, as well as a number of mobile field hospitals abroad. The latter were well equipped and could provide all essential services for front-line medicine and surgery. In oversea theatres of war the value of R.A.F. hospitals of all kinds was not only in the first-class facilities for treatment which they afforded; equally important was the expert technical knowledge necessary for determining a man's fitness for his trade. 92% of aircrews and technicians treated in forward areas at mobile field hospitals were returned to their units in a very short space of time, after assessment by R.A.F. medical officers.

The R.A.F. has hospitals and sick quarters in the United Kingdom to look after all R.A.F. personnel—ground, technical, and aircrew. R.A.F. hospitals abroad are primarily for aircrews and technicians. The Army method of dealing with casualties is to evacuate them down the line as quickly as possible to keep the front line clear for action. In the R.A.F. it takes so long to train aircrews and technicians that it is necessary to save every man possible. If a member of an aircrew or technician is likely to be fit for duty in from 6 to 8 weeks he is treated in an R.A.F. mobile hospital in a forward area. Of selected cases approximately 92% have been got back to duty in the field. The R.A.F. treats its own cases, whether long- or short-term. It has instituted rehabilitation both in hospitals and at separate centres. Of rehabilitation cases, approximately 80% of all fractures have gone back to full duty, 60% of burns, and 46% of nervous breakdowns. It treats its own cases of tuberculosis and retains them in Service hospitals until local authorities can take them.

Dietetic Researches

A team of experts watched over the diet at hospitals both at home and abroad and advised upon any deficiencies in calorific value or vitamin content. This service also covered the dietetic needs of the whole of the R.A.F. at home and abroad.

All fronts were covered at different times, some fronts more frequently than others, to see that the nutritional state of the R.A.F. was satisfactory. In Europe there was an opportunity at the same time to ascertain the ill effects of under-nourishment on certain of the civil population, including children. By feeding these individuals with the substances that it was considered they were most lacking, not only was their condition improved or cured but valuable information was obtained for our own use. This information become useful sooner than we expected, as the sudden ending of the war cast on our hands a large number of prisoners of war who had been exposed to forced marches with little or no food and had suffered severely. The information gained previously in the treatment of civilians made it possible to give immediate and most satisfactory treatment to our ex-prisoners of war.

The results of the dietetic researches carried out in the R.A.F. are immediately passed to the sister Services, Ministry of Health, Ministry of Food, and the Medical Research Council for their benefit, as well as to the Dominions and the United States of America.

Sickness Figures

The highest incidence of sickness at home was during the years 1939 and 1940, and coincided with a severe winter under wartime conditions and the influx of a great number of men and women into the R.A.F. and W.A.A.F. from civilian life. In 1942 and 1943 sickness at home fell sharply to low level and the improvement in health has been maintained.

The worst years for incidence of sickness over-seas were 1940 and 1941. R.A.F. personnel were then being posted in substantial numbers to unhealthy climates, and the provision of preventive measures in the absence of the necessary materials was slow, laborious, and costly. The introduction of full preventive measures, including inoculation against a variety of diseases and the issue of drugs to personnel, and the improvement of hygiene and living conditions, produced a sharp fall in the rate of sickness in the R.A.F. abroad in 1943, and has persisted since.

Prevention of Disease

Hygiene during the war presented a variety of problems which had to be faced and overcome. Among them were the selection of personnel and the detection of disease, the maintenance of proper living conditions at home and abroad, the prevention of the spread of disease from one country to another by aircraft, control of hours and conditions of work, prevention of air-sickness, and the safeguarding of dental health.

The introduction of mass miniature radiography in the Royal Air Force in 1941 disclosed much of value and interest about chest conditions as a whole, apart from tuberculosis of the lung. By the end of the year 1944 a total of 480,492 examinations had taken place. The Royal Navy, which introduced mass radiography before the war, was the first Service to have it. The R.A.F. was the first Service to have mobile miniature mass radiography.

Evacuation of Casualties by Air

Great progress was made in 1942, 1943, and 1944 in the development of an organization for the evacuation of casualties by air. The figures for 1940 were about 300, and for 1941 some

2,000. Evacuation on a large scale began during the campaigns in the Western Desert and Libya; after Alamein the numbers reached 2,000 a month, and in November and December they were approximately 200 a day. 1943 saw the development of the casualty air evacuation units and sections, and the responsibility for the evacuation of casualties by air to Transport Command, 28,000 casualties being evacuated in that year, mostly from the Mediterranean Theatre.

In 1944, following the invasion of Europe, very much greater numbers were evacuated from Western Europe to Great Britain. During the second week of August, 1944, the daily total evacuated by air surpassed the daily number evacuated by sea, and after September the numbers evacuated by air were constantly higher than those brought by sea, except for two short periods in October and November. August, 1944, saw the introduction of a shuttle service from forward to base airfields. This service greatly shortened the time which sick and wounded had to spend in travel, and between August and the end of the campaign in Europe some 42,000 patients were evacuated by this service. Between June and the end of the war in Europe 82,000 cases were evacuated by air to the United Kingdom, and the total of cases throughout the world evacuated by the R.A.F. amounted to 300,000 for the year 1944. About 92% of these were Army personnel, and about 5% of cases evacuated from the European Theatre were American personnel.

The R.A.F. brought out by air 60% of the British casualties in Western Europe, excluding prisoners of war, whereas in the Far East almost 100% in forward areas were brought back by air and the chances of recovery greatly increased. The number of ex-prisoners of war brought back to this country by air was 144,188.

HOSPITAL NURSING STAFFS

FACTORS IN ASSESSING REQUIREMENTS

The new Minister of Health has confessed that his Ministry is "haunted" by the dangerous depletion of hospital nursing staffs and by the fact that wards are closing down all over the country owing to lack of nurses. In this connexion a recent report by a committee (presided over by Dr. Morley Fletcher) of King Edward's Hospital Fund for London is very timely. The committee deplores the fact that too often questions of staffing are decided by financial considerations. "The salaries bill is looked upon as one of the heaviest items of expenditure, whereas in terms of value for money it is perhaps the most economical."

Factors to be taken into account in assessing staff requirements are: (1) space, such as the general lay-out of the hospital, length of corridors, and size of wards; (2) size of domestic staff; and (3) reserve or pool of nurses needed to replace those on holiday or sick leave. Further considerations apply to hospitals which are training schools, such as recognition of the student status of the nurse in training, and the block system of training whereby student nurses are withdrawn from ward duties for a term of theoretical work each year.

Estimated Ratios

To decide the optimum ratio of nurses to patients is not easy. A rigid standard of so many nurses for each 100 beds should not be imposed regardless either of the size of the wards or of the type of case to be nursed. Nevertheless, the committee does suggest the ratio of 70 ward nurses to 100 beds, the ward staff to be made up of 5 sisters, 5 trained nurses, 10 fourth-year student nurses, and 50 first- to third-year student nurses. This does not allow for the block system of training, and if the block system is introduced there should be an increase of one-fifth in the recommended number of first- to third-year student nurses, making their number 60 and bringing up the number of total nursing staff to 80.

As for the relations between numbers of ward staff and numbers of nurses engaged in other duties in the hospital, it has been ascertained that the total of nurses engaged in such other duties varies between 19 and 38% of the number engaged in the wards, the proportion being markedly higher in the smaller hospitals. If, therefore, the ratio for the wards is 70 nurses to 100 beds, not allowing for the block system, an addition of 38% for the administrative and departmental staff would give 96 as the total of the nursing staff for 100 beds. This leads to the conclusion that some general hospitals with out-patient and other departments may in future have to plan for a total nursing staff approximating to one nurse to each in-patient bed. In special hospitals the requirements might be even greater.

The King's Fund Committee recommends that those hospitals which can staff on adequate lines should not underestimate their requirements of nursing staff, but should set a standard of conditions of nursing care which would enhance the reputation of nursing as a career and help recruitment to the profession.

The report has several recommendations to make on hours of duty and on accommodation for nurses. With a more generous allowance of trained staff there is room for some modification of the shift system, and experiments in this direction are to be encouraged whenever sufficient staff is available.

QUEEN'S INSTITUTE OF DISTRICT NURSING

MIDWIFERY CASES IN 1944

The following report on midwifery cases attended by the Queen's Nurses and village and other nurse midwives shows the results for the year 1944.

The number of maternal deaths was 85, and the maternal mortality of 1·per 1,000 total births for the year was the lowest ever on record. This is an achievement of which the midwives may well be proud, particularly as it was in a year full of anxiety and strain for the mothers and themselves. It is puzzling to find that in spite of careful ante-natal supervision the number of cases of eclampsia is still too high, and in many cases no symptoms could be detected prior to the eclamptic condition. It suggests that some further research on this complication would be valuable.

Among the maternal deaths in this report 58 occurred in hospital, of which 18 are classified under "accidents of labour," the term including ante- and post-partum haemorrhage, obstetric shock, heart failure, etc. Every patient booked with the midwife is followed up to the end of the case, whether the midwife completes the attendance herself as midwife, or it is transferred to a doctor or to a hospital. The maternal mortality, therefore, includes all complicated cases; many of these would have been doctors' cases had the patients been able to afford to pay the doctors' as well as the midwives' fee.

The number of cases attended (no doctor engaged for the confinement) was 85,153. The total number of midwives was 4,253, of whom 1,633 were Queen's Nurses and 2,620 were village and other nurse midwives. Of the patients attended, 20,664 were primiparae.

Analysis of Maternal Death Rates

Year	Puerperal Sepsis	Other Puerperal Causes	Total Puerperal Mortality	Non-Puerperal Causes	Total Maternal Mortality
	Per 1,000 *live births*				
1942	0·21	0·89	1·10	0·09	1·19
1943	0·33	1·01	1·34	0·04	1·38
1944	0·12	0·82	0·94	0·07	1·01
	Per 1,000 *total births*				
1942	0·20	0·87	1·08	0·09	1·17
1943	0·32	0·99	1·31	0·04	1·35
1944	0·12	0·81	0·93	0·07	1·00

The number of times medical aid was sent for was: For mother, 28,616 (33.6%) (during pregnancy 5,736, during labour 19,784, and during puerperium 3,096). For infant, 5,129 (6.0%). The number of forceps cases was 3,648 (4.3%).

Causes of the 85 Maternal Deaths

		Per Total Maternal Deaths	Per 1,000 Births
Sepsis	10 cases	11·8%	0·12
Accidents of labour	29 ,,	34·1%	0·34
Eclampsia	11 ,,	12·9%	0·13
Embolism	7 ,,	8·2%	0·08
Complications	22 ,,	25·9%	0·26
Non-puerperal	6 ,,	7·0%	0·07

There were post-mortem examinations in 18.8% of the maternal deaths, compared with 25.4% and 27.1% in the two previous years.

The figures for maternity nursing in 1944 were: Number of cases attended (doctor engaged, midwife acting as maternity nurse), 44,545. Number of maternal deaths, 57 (1.28 per thousand). Three deaths were due to miscarriage; these being doctors' cases the details were not verified.

VACCINE AGAINST SCRUB TYPHUS

A CO-ORDINATED EFFORT

The outbreak of war in the Far East brought many problems to the Allied High Command, particularly in relation to infective diseases. Among these was scrub typhus, a disease infecting rodents in Asia and Australasia, transmitted by mite larvae ("harvesters") and contracted by human beings living in jungle and grassland infested by the mite. As Allied troops pushed into Burma and New Guinea, and other regions where jungle warfare conditions prevailed, there was a marked rise in the incidence of the disease. It has a considerable mortality rate, and in most cases the illness is protracted and incapacitating. It is most prevalent during or immediately after the monsoon seasons.

Research work has been carried out in many parts of the world on scrub typhus vaccine, and as a result of the co-ordination of the efforts of scientific workers in the United States and the United Kingdom, medical research workers at the National Institute for Medical Research, Hampstead, were able in 1944 to work on lines which finally resulted in a suitable vaccine being prepared for clinical trials. By the end of 1944 the Army High Command in the Far East sent a request for 1½ million doses of this vaccine. It was asked that as large a quantity as possible should be made available for immunizing troops in combat areas before the onset of the monsoon and the accompanying increased risk of infection with mite-borne typhus fever.

Race against Time

To translate a laboratory technique into a manufacturing process requires time, but in the case of scrub typhus vaccine speed was the essence of the scheme. After discussion with the War Office, the Ministry of Supply, and the Medical Research Council, the Wellcome Foundation Ltd. was asked to undertake the work. The project was given a secret code name, and it was decided to erect the laboratories and animal breeding houses at the Wellcome Veterinary Research Station at Frant, Sussex.

In view of the extreme urgency of the required buildings and the difficulty of getting adequate civilian labour, as a result of bomb damage repair work going on in Southern England at the same time, the building operations were carried out by the Army. A company of Royal Engineers, with Pioneers and specialist contractors, began work on Jan. 14, 1945. On May 4 the laboratories were ready, including specialist equipment, much of which was of an entirely new design. The highest priority for materials and apparatus was afforded, and equipment not available in this country was obtained by air from the United States. The design of the laboratories, together with the responsibility for implementing the scheme and the production of the vaccine, was placed with a director loaned by the Medical Research Council to the Wellcome Foundation.

Supply of Essential Animals

The method of manufacture required the use of large numbers of cotton-rats. These rats are indigenous in the southern States of North America (Louisiana, etc.), and in order to establish breeding colonies in this country and get sufficent animals for producton of the first batches of vaccine, cotton-rats had to be obtained from the U.S.A.

Weekly shipments of animals were sent by air across the Atlantic in specially heated aircraft, these consignments having the highest priority. The rats on arrival in this country were brought down immediately to Sussex, sometimes by air but in most cases by Service transport.

Protection of Trained Personnel

To provide personnel for the animal houses and laboratory work, A.T.S. and R.A.M.C. were specially selected and trained in the work they had to carry out. Scientific officers were recruited from the R.A.M.C. and scientific bodies in this country. In view of the high risk to which all personnel would be exposed in the preparation of scrub typhus vaccine, great precautions were taken to reduce this risk to a minimum. Special equipment was designed and built, incorporating new principles of air sterilization. Further, all engaged on the work were immunized, and strict control was exercised over the disposal of infected material.

As a result of the co-ordination of all concerned it was found possible to prepare 100,000 doses of the vaccine for shipment to the Far East at the time required by the Army authorities. Preparation of additional quantities is proceeding.

JOINT TUBERCULOSIS COUNCIL

The Joint Tuberculosis Council held a special meeting on July 21 at the London School of Hygiene and Tropical Medicine, to consider some important reports prepared by committees, and the following statement has since been drawn up for the medical press.

Notification of Tuberculosis

The Committee on Notification of Tuberculosis, which has for some time been considering whether the present method of notification really achieved the best results, proposed some important changes in the system. The most notable is a suggestion that notification in the future be a two-stage procedure. The first stage would be that of *intimation*. A practitioner, suspecting that a patient might be tuberculous, would be able to send a non-committal intimation to the local authority instead of, as now, being compelled to make up his mind and decide upon a definite diagnosis of tuberculosis, which automatically puts the patient on the register of tuberculous persons. Under the new procedure the final diagnosis of the patient, and therefore the responsibility of placing him on the register, would rest with the tuberculosis officer. At the same time, there would be nothing to prevent the general practitioner who was certain of his ground from notifying the patient exactly as is done now. The value of the suggested new system would be that provision would be made for the doubtful case, whose illness could be thoroughly investigated by a tuberculosis consultant without any possible "registration stigma" in the event of his turning out not to have the disease. The Council decided to forward the committee's report to the Ministry of Health and to suggest that a meeting be arranged to discuss the best methods of achieving its objects.

Memorandum 266/T

The Council will shortly publish the interim report of the Committee on Ministry of Health Memorandum 266/T. This report raises three different kinds of issues arising out of that memorandum. First, there are administrative amendments, which could be authorized quite simply by an amending memorandum. Secondly, there are many points on which interpretative guidance is needed by bodies and officers administering the scheme; these could be dealt with by Ministry circulars, or guidance could be given by an authoritative body such as the Joint Tuberculosis Council itself. Thirdly, there are the matters in which information rather than specific action is necessary. Some method is urgently needed whereby administering authorities can exchange information and pool their experience. The committee believe that the basic monetary allowance under 266/T should be substantially increased and that dependants' allowances should be increased also.

Sanatorium Staff and Mantoux Test

The third main subject dealt with at the Council meeting was the conversion of hospital and sanatorium staff from Mantoux-negative to Mantoux-positive. It was decided to prepare a memorandum of advice on this subject, to be published shortly. The main points of the memorandum will include a month's "work and bed" for staff presenting no symptoms, no radiological evidence, and no significant increase in the sedimentation rate. For the symptomless with an increased sedimentation rate, a month's "half-duty and rest" is suggested, and if at the end of that time the sedimentation rate was normal, full duty would be resumed. For those without symptoms but with enlarged hilar glands and an increased sedimentation rate, a month in bed is the recommendation, to be followed by a month's "half-duty and rest" if this succeeds. Those who are actually ill, of course, are treated for as long as is necessary. It is most important, the J.T.C. believes, that Mantoux-negative staff should be told that they are negative, and that they are almost certain to become positive. They should also be told that just as most town dwellers go through a primary tuberculosis infection at some time in their lives and know nothing about it, the same uneventful course is probably the lot of the sanatorium nurse or maid changing from negative to positive.

Dr. Robert Young Keers has been appointed medical director of the Red Cross Sanatoria of Scotland, which are being established at Tor-na-Dee and Glen o' Dee by the Scottish Branch of the British Red Cross Society for the treatment of ex-Service men and women who have contracted pulmonary tuberculosis as a result of their war service. Dr. Keers, who is a graduate of the University of Edinburgh, has had a wide experience of tuberculosis work both in Britain and on the Continent. Since 1939 he has been medical superintendent of Tor-na-Dee Sanatorium.

Correspondence

Penicillin and Synthetic Rubber

SIR,—Neither in papers describing different methods of giving penicillin by continuous intravenous or intramuscular drip, nor in hospitals one visits on returning home from the Services, does one see or hear any reference to the deleterious effect of synthetic rubber on a solution of the drug. This effect was known in B.L.A., and it was re-tested and confirmed by Major Craik, specialist pathologist, in Italy. Most of the rubber tubing now issued is of the synthetic variety, white or red, and it is a proven fact that contact with such tubing for an hour or two during the slow passage that a drip apparatus demands almost completely destroys the potency of the penicillin. Natural red rubber, on the other hand, has almost no ill effect. For this reason we in Italy used to collect all the natural rubber tubing we could lay hands on for continuous penicillin therapy. Some of the varying or disappointing results obtained in different centres, or even in the same centre at different times or in different hands, may well be due to the fact that natural rubber was used on some occasions and the synthetic variety on others.—I am, etc.,

F. A. R. STAMMERS,
Late Consulting Surgeon, Forward Areas, Italy.

Birmingham.

Administration of Penicillin

SIR,—In assessing the relative merits of the administration of penicillin by continuous infusion and repeated injections (Sept. 1, p. 283) I think that much depends upon the nature of the cases being treated. My conclusions from a similar number of cases are the reverse of those found by Dr. E. C. Turton. Over 90% of the patients preferred repeated intramuscular injections. The main reason for this was that a continuous drip kept them confined to bed, and separate injections gave them a great deal more freedom of movement, and a chance to be up and about between doses. I must add, of course, that all the patients concerned were either primary or secondary syphilitics and mainly ambulant cases.—I am, etc.,

SYDNEY JONES.

Grove Hospital, London, S.W.17.

Pituitary Snuff and Duodenal Ulcer

SIR,—For some years the use of pituitary snuff in the treatment of duodenal ulcer enjoyed a vogue, chiefly in Germany, and has more recently been encountered here. My notice was first drawn to it by seeing two cases of profuse malaena and one of duodenal perforation in patients undergoing the "cure."

Dr. John Stevenson (Sept. 1, p. 298) is optimistic, and writes that many hundreds of working hours have been saved by such ambulatory treatment. Its basis is as irrational as was that of histidine therapy, now nearly extinct. That, however, would be of small account if it really did what was claimed for it. But does it? We must discount Dr. Stevenson's own case, because all sufferers from duodenal ulcer, and doctors more than most, are prone to benefit from suggestion. We are then left with 75 men treated from Oct. 27, 1944, to April 2, 1945—i.e., five months and a few days. During this period 60 had no pain. Presumably 15 did suffer relapse. A five-months remission of symptoms in 71% of a series, made up of men who had had this trouble for from 1 to 20 years, is merely an indication of the natural history of the duodenal ulcer. If Dr. Stevenson had not been forced by circumstances to terminate his observations so early, and had he been able to produce an 18-months observation with the same results, then the discovery of a useful therapeutic agent would have been suggested. Even so, the phenobarbitone should have been omitted, and the results given in relation to the length of history of ulceration. I and many others obtained equally good "results" from the treatment of ambulatory out-patients with injections of histidine or, alternatively, distilled water! May it not be that the full diet and the confidence inspired by a new treatment were responsible for the apparent success?—I am, etc.,

A. H. DOUTHWAITE.

London, W.1.

Routine Rh Testing

SIR,—The valuable article by Plaut, Barrow, and Abbott in the *Journal* of Sept. 1 indicates that routine Rh testing of women attending ante-natal clinics and maternity departments is becoming increasingly common, and it is hoped that ultimately it will become universal. The information that an expectant mother is Rh-negative is of value to the obstetrician in giving warning (*a*) of the risk of haemolytic disease in the foetus, and (*b*) if the mother should require a transfusion.

Plaut *et al.* record their results in two series, the first tested with standard anti-Rh_0 serum (anti-D or Δ), the second with anti-Rh_0, anti-Rh′ (anti-C or Γ), and anti-Rh″ (anti-E or H). The authors have followed the writer's practice of including in the Rh-negative groups those persons recognized in the second series as belonging to subtypes Rh′ and Rh″. In my opinion human red cells should be classified into 4 Rh-positive types comprising Fisher's Rh_z (CDE), Rh_1 (CDe), Rh_2 (cDE), and Rh_0 (cDe), and four Rh-negative types comprising Rh′ (Cde), Rh″ (cdE), Rh_y (CdE), and rh (cde). The possession of the dominant antigen D is the fundamental thing which should determine whether an individual requiring transfusion is called Rh-positive or Rh-negative; this is the component identified by immune anti-Rhesus sera in Landsteiner and Wiener's original work, which most commonly gives rise to iso-immunization in the human subject.

From the therapeutic standpoint the individual who lacks antigen D should receive by transfusion only Rh-negative blood of genotype rhrh. In assessing the constitution of the prospective donor, however, all persons other than those of genotype rhrh should be excluded. About one-half of the Rh-negative (rhrh) women sensitized by an Rh_1 foetus react by producing agglutinins of both anti-Rh_0 and anti-Rh′ types (i.e. anti-Rh_1 sera); while those sensitized by an Rh_2 foetus may produce anti-Rh_0 and anti-Rh″ agglutinins (i.e. anti-Rh_2 sera). Individuals whose serum contains anti-Rh_1 or anti-Rh_2 agglutinins are likely to experience a sharp haemolytic transfusion reaction if given blood of subtype Rh′ and Rh″ respectively. Thus there is a small percentage of persons of subgroups Rh′ and Rh″ (totally about 2%) who must be counted as Rh-negative when recipients of blood but should not be used as Rh-negative donors. The provision of Rh-negative blood for transfusion is generally a matter for the blood bank and Regional Transfusion Officer, and the use of the three anti-Rh sera by this responsible authority is necessary to determine the completely Rh-negative character of the blood for transfusion. In the testing of the recipient only one potent anti-Rh serum need be used—namely, that of anti-Rh_0 type (anti-D or Δ)—and antisera containing anti-C or anti-E should be avoided, so that confusion of the subgroups R′ and R″ with the true Rh-positive types containing antigen D will not occur—I am, etc.,

D. F. CAPPELL.

The University, Glasgow.

Diminution of Vision in Returned Prisoners of War

SIR,—It is now becoming more and more evident that the syndrome of sore tongue with cracked lips (cheilosis), dry furfuraceous skin, dry scaly scrotum, accompanied in many cases by various nervous manifestations, more particularly a retrobulbar neuritis (which if left untreated passes on to a partial optic atrophy of varying severity), has been an affection of many of our prisoners of war in Japanese hands—especially in some camps. Will you permit me to make some comments on this subject? First, the whole syndrome has been very fully reviewed by H. S. Stannus in his Lumleian lecture of 1944, of which abridged accounts appeared in the *British Medical Journal* of July 22 and 29, 1944, accompanied also by a very full bibliography. Therefore no useful purpose would be gained by making reference here to the more detailed description or the aetiology of the condition. But I would like to say a little about treatment—from personal experience in West Africa in the study of this condition there over a number of years (1930–8); and more particularly with regard to impaired vision (which, after all, can be the most serious of all residual effects).

As a general rule I found it worth while to treat all cases having a history up to 12 months. Over that period improvement was problematical unless, of course, the patient was still suffering from subacute effects of his malnutrition, as was so

commonly the case among Africans who by virtue of their visual defect were often unable to earn a living. These cases, in which diminution of vision had become manifest in less than a year, generally showed good prognosis, and those with a history of six months or less an excellent one. It was usual, however, in cured cases to find some mild intolerance on the continued reading of small print; also there was often a *persistent* photophobia (more marked, of course, in a tropical country).

I gave 1 oz. a day of marmite, and continued this high dosage over a period of at least six months. In favourable cases visual response began to become evident within some three to six weeks, usually about "1 Snellen line a fortnight." Others were much slower, while a considerable number had reached an irreversible stage and did not improve. Occasionally, however, one obtained unexpected and unhoped-for results where all the signs suggestive of irreversible changes had intervened. For that reason alone persistence in treatment was always justified. With regard to irreversible changes, in Nigeria (as I have reported elsewhere) I was able in a number of cases to trace patients' histories back over many years: some as far back as 1907. From these inquiries it was evident that this syndrome was very prevalent indeed among the old Government *boarding* schools of those days. It is worth recording, perhaps, that none of these patients had become blind, their condition remaining practically stationary over the years, in contradistinction to progressive changes occurring in primary optic atrophy, with which this condition could be quite easily (in some cases) confused. It was also personal experience, as reported upon again elsewhere, that absolute blindness did not occur, though in many cases central visual acuity was often reduced to hand movements, and, in a number, permanently so.

With regard to mouth and skin lesions, it is necessary to stress how rapidly these (but not vision) clear up, with good food and with active therapy, in a space of 10 to 14 days. This point is of importance, because the vast majority of my own patients did have these signs in the first manifestation of their illness, but later these disappeared, so one must question patients with regard to their history.

In West Africa I did not use riboflavin—it was not available then—but there is little doubt that riboflavin "deficiency," as Stannus has shown, plays a major part in this condition. Probably, however, as he also agrees, other factors of the B complex are involved. Presumably, therefore, it would be wiser in general treatment to include the whole of the vitamin B complex. It is to be hoped, however, that extensive investigations with riboflavin will soon have been carried out, particularly with reference to visual response, in these other cases now that once more opportunities for further study have presented themselves. No doubt in this respect we shall also gain much valuable knowledge from our American colleagues.

Marmite was exceedingly well taken by Africans, because its salty taste also appealed to them. How far Europeans would accept marmite in these necessarily large doses is difficult to say. I found—in common with general experience—that brewer's yeast was not liked, though it was accepted in the hope of a cure. No doubt "food" yeast will play a valuable part in continued treatment of these European cases. But is it generally available, and, if not, can steps be assured that it would be available to this class of patient after he leaves hospital, as well as marmite?

I understand that, with regard to food itself, present allowances for an extra-nutritious diet are made only for a comparatively short specified period of time to repatriated prisoners of war. It is essential to view a highly nutritious diet for these cases as an integral part of treatment. Can we be assured that this will be available over any necessary prescribed period—say at least six months?

One further observation here might not be out of place. It was fairly certain this syndrome would become manifest under the conditions in which our prisoners of war have lived in Japanese hands. The dietary is, in fact, in many cases—especially those who were housed in jails—very similar to some of the dietaries experienced in West Africa—viz., rice and manioc, with occasionally some sweet potatoes, a little fish, some green food, and red palm oil—the latter fortunately rich in vitamin A precursors; and "what else they could pick up." In the *Journal of Tropical Medicine and Hygiene* of Sept. 1, 1942, I stressed the danger of certain staple carbohydrate foodstuffs when eaten to excess, where the general dietary itself also was poorly balanced. Such foodstuffs named were rice, manioc, sago, sugar-cane. One is convinced then of the need for better-class and more varied *carbohydrates* as an essential consideration, affecting dietary problems of local peoples over-seas. There is a grave danger in emphasizing the good qualities of rice among peoples of the poorer community there. It is not enough merely to demand more protein as the solution of their problems. It is of equal importance for us to realize, as McCarrison has done, the need for variation and availability of staple carbohydrate foodstuffs.
—I am, etc.,

D. FITZGERALD MOORE.

Domiciliary Midwifery and the Family Doctor

SIR,—The joint authors of the above article (Sept. 1, p. 294) are representative of the thoughtful and experienced practitioners who view with concern any suggestion that the usual family doctor is not the proper person to conduct confinements. Whether their arguments apply to the majority of the profession to-day is another matter. Almost all the facts presented by the authors are true, but the reasons therefor are capable of other interpretation. They differ, for example, from those of the Royal College of Obstetricians and Gynaecologists and they are not held by maternity hospitals or by the majority of midwives. Who, then, is to judge what is best for the woman? She herself is seldom consulted, because it is presumed that her judgment is obscured by housing, domestic, and financial worries. The patient, however, pays the obstetric piper and her chosen theme is heard in local authority policy. It is not generally recognized that the bulk of midwifery practice is heavily subsidized by rates and taxes. In my own area approximately 50% of all burgh births occur in the municipal maternity hospital, and another 38% come under the domiciliary scheme. In other words, the burgh subsidizes over 80% of all confinements.

The popularity of the hospital is neither recent nor entirely due to bad housing, as the authors would suggest. Some of the beds are private, and many women who have had as many as six children in the hospital come from good houses. Most of the mothers in this burgh are seen at my office or in the burgh maternity hospital, and I can assure the authors that most prefer hospital to their own homes because (*a*) it is cheaper, and (*b*) it relieves them of nursing and domestic difficulties. It scores over the domiciliary scheme also in that they are maintained, and they know in advance their financial liabilities whatever complications may arise. It was only by very preferential treatment that the domiciliary scheme could be got going locally, and the non-enthusiasm was shared initially by patient and practitioner alike. It is very significant that the occasional applicant who considers her assessment too high invariably asserts that she would as soon have the *midwife* alone.

I agree with the authors that the risk of infection is infinitely greater in hospital than in the home, and I know from special investigations that sepsis—e.g., mastitis—may manifest itself after the patient leaves hospital. While the introduction of sepsis is often unavoidable, its spread is the most formidable problem which any epidemiologist can tackle. Much concerted and highly technical research into staphylococcal infections has been urged and is long overdue. Despite the fact that the presence of sepsis in the local hospital has been openly announced whenever it arose, there has never been any falling off in the clamour for admission to hospital.

The statement that local authorities think only in terms of institutions and clinics and that environmental factors are ignored is untrue. The local authority is very much concerned with environment (one of its major functions—and worries), but until recently it had little to do with practitioner services, although it had pioneered such adjuncts as ante-natal and child welfare services. That the practitioner realizes their importance since he has been actively associated in a local authority scheme is admitted—somewhat naively—by the authors, who state: "Under the Maternity Services Act the family doctor has already realized that the more careful and skilful his ante-natal examination is the less trouble he has at the confinement." I would also remind the authors that their domiciliary scheme

was prepared by the local authority under the Maternity Services (Scotland) Act, 1937, and that it is very much the concern of the local authority that it should function properly. The public is very sensitive to deficiencies in the social services, and the medical officer of health who has prepared and integrated the domiciliary scheme with his other services must correct any maladjustment. Failure to do so is reflected in the results, of which the best index is the infantile mortality rate.

Success, as the authors say, depends on team-work: the midwife, the doctor, the obstetrician, the hospital, the health visitor, the clinics, and also the paediatrician. The authors would arrogate the chief role to the doctor, as is his right as family doctor, but, generally speaking, I would say that he has forfeited his right. In urban areas, at any rate, the family doctor in the old sense—the authors' sense—has almost ceased to exist. He is no longer the self-reliant man his predecessor was, nor is it in his own interests or that of his patients that he should be. Unhappily he has permitted, *inter alia*, what should normally be general practice to become a specialty.

Midwifery is time-consuming and relatively unprofitable. As trained midwives became more common the practitioner allowed her to occupy his seat at "the bedside of the woman in labour," to quote the authors, while he went elsewhere, Even under the domiciliary scheme the 1:4 ratio of expected attendance by doctors at confinements has been found to be much too optimistic. How often does one see practices advertised with a list of their desirable features, including "no midwifery"? As a result the burden of real midwifery has had to be shouldered by the midwives and by the hospitals. Many practitioners are loath to adopt what I have referred to as adjuncts of midwifery, and in some areas the operation of the domiciliary scheme was held up because practitioners objected to calling in an obstetrician. I, personally, favour domiciliary midwifery conducted by the family doctor who knows his job, and I have been fortunate in having practitioner colleagues of the type suggested by the authors—men whose help and judgment have been freely involved and given in the absence of the obstetrician. They constitute a minority of the profession, however, and few are under 50 years of age. The front-line unit in the home and in the hospital is undoubtedly the midwife, and too often it is she who must decide when to initiate action involving the whole team. In England the general practitioner has almost dropped out of the team altogether, and, statistically at least, the results there are better than in Scotland.

I would endorse what I would call tendencies rather than faults imputed by the authors: in the midwife—a reluctance to send for the doctor; in the doctor—a reluctance to be sent for (not mentioned by the authors); in the less experienced obstetrician—a tendency to dramatize and overtreat; in the hospital—a disinclination to recognize sepsis as such and to establish early bacteriological diagnosis; and, finally, to return to the doctor—a somewhat casual regard for the anatomy of parts to be sutured.

In conclusion I would refer to the authors' statement that "in the proposed National Health Service the maternity services would not be under the direction of the local authority." That part of the maternity services of especial interest to the author—namely, domiciliary midwifery—*is* to remain with the local authority. The very necessary adjunct, the municipal maternity hospital, may go to an *ad hoc* authority, the Hospital Board, while no one knows whether the obstetrician remains to advise the practitioner without having beds at his disposal or whether he shuts himself up in the hospital. Doubtless this disintegration will be glossed over by reference to "liaison" and "the closest possible co-operation."—I am, etc.,

JAMES R. W. HAY,
Medical Officer of Health.

Kirkcaldy.

SIR,—In reply to the article (Sept. 1, p. 294) by Drs. D. Dale Logan and E. K. MacKenzie I should like to make the following observations:

In any large maternity hospital the maternal mortality for "emergency" cases is many times higher than for "booked" cases—i.e., mothers looked after from early pregnancy by the specialist have a much lower mortality in childbirth than those who are not.

Apart altogether from the question of the skill and experience of the accoucheur, what facilities are at the disposal of the general practitioner doing midwifery in the home when something goes wrong? How many carry a blood bank with grouping sera or even plasma? Drs. Logan and MacKenzie will admit that some cases at least of post-partum haemorrhage are not due to a mismanaged third stage.

Why is it that we obstetricians cannot but note that cases of "failed forceps"—commonly due to an incompletely dilated cervix—always come in from outside and never occur in hospital?

Why is it that in any large maternity hospital each year there are a number of cases admitted so far advanced in obstructed labour that the life of the baby is lost and that of the mother endangered and in some cases lost also?

Caesarean section has been proved to give the best results for mother and child in major degrees of placenta praevia, and the time to perform the operation is before the woman becomes exsanguinated. I have rarely seen exsanguination in a "booked" case which turned out to be placenta praevia, but I cannot say the same of the "emergencies." These few instances—and many others could be quoted—have to be explained.

I have many times been called out with the mobile resuscitation unit and have found parturients *in extremis*—this state of affairs being due not to any lack of conscientiousness on the part of the doctor but (*a*) to his lack of training in obstetrics, and (*b*) to the lack of facilities at his disposal. Until such time as all medical men practising obstetrics are trained in the art such a position will obtain.—I am, etc.,

D. C. WISEMAN.

Sheffield.

SIR,—Judging from the recent report of the Royal College of Obstetricians and Gynaecologists, suggesting a "specialist midwifery service," and from the very practical article on domiciliary midwifery and the family doctor (Sept. 1, p. 294), there appear to be two schools of thought on the creation of a sound midwifery service for the country.

Under the circumstances a commission composed of obstetricians and G.P.s should be set up to formulate a plan for an efficient type of midwifery service which would be satisfactory to both branches of the profession. Neither a specialist midwifery service nor a domiciliary one would be likely to solve the problem, as the first would appear to be rather an extravagant measure for the whole country, and the second might fail in the treatment of abnormal cases. The formation of such a service should be based on the treatment requirements of normal and abnormal cases rather than on the formation of a new specialist branch of the profession.—I am, etc.,

CARLISLE KELLY.

Freshwater, I.O.W.

Anaesthetic Risks

SIR,—Anaesthetists and surgeons will be grateful to Major Kremer for publishing the description of seven cases of meningitis following spinal analgesia (Sept. 8, p. 309). This report is really helpful as a guide to other practitioners who are anxious to assess the risks and advantages of various forms of anaesthesia and analgesia.

There has been a tendency of recent years for anaesthetists and surgeons to abandon the use of well-tried and approved methods of inhalation anaesthesia, and to adopt other techniques the dangers of which have not been properly understood. We have to a large extent banished chloroform from our theatres, and opened the doors wide to other devils worse than the first. The alarming increase in the incidence of anaesthetic mortality and morbidity shows us that new methods are not necessarily better methods.

After the publication of Major Kremer's report, that of F. T. Evans (*Lancet*, 1945, **1**, 115), and other evidence now available, it will clearly be quite unjustifiable to use spinal analgesia for operations which can be properly performed under inhalation anaesthesia. I think it will be generally agreed, now, that spinal analgesia should be administered only by the full-time professional anaesthetist, thoroughly familiar with the technique and aware of the many possible dangers.

While it is right that new agents, and new methods of administration, shall be constantly investigated, it would be much wiser, as Flagg says, if they were allowed to ripen on the tree of experience before being extensively used. It would be helpful if there were established special centres of research

where new drugs and techniques could be thoroughly investigated and from which practitioners could receive information and advice. Prof. Macintosh has already established a pioneer centre at Oxford. Major Kremer has indeed done us a great service, and I very much hope that other practitioners will also tell us of their misfortunes as well as of their successes, so that each and every method of anaesthesia and analgesia may find its proper place in modern anaesthetic practice. Then, perhaps, we shall hear no more of those too numerous tragedies which have been so frequently associated with spinal analgesia of recent years.—I am, etc.,

New Barnet, Herts. JOHN ELAM.

Trilene Analgesia in General Practice

SIR,—One of the many problems the single-handed practitioner has to face is how to make minor surgical procedures painless. To incise abscesses and whitlows under local freezing with ethyl chloride is crude and far from painless, especially during the thawing-out stage. Local analgesia solves many problems, but is limited in its application, and distinctly dangerous for operations on the digits, and for circumcision, owing to the risk of gangrene, although M. Arnold (*S. Afr. med. J.*, 1943, **17**, 222) and M. A. Magid and O. S. Culp (*J. Urol.*, 1943, **50**, 508) have evolved a technique for the latter which appears to have overcome this risk, and their method has been confirmed by no less an authority than Hamilton Bailey. It is unsafe for dilating urethral strictures because of the risk of absorption.

Gas-and-air or gas-and-oxygen has the disadvantage of requiring expensive apparatus cumbersome to carry. The basal anaesthetics have the disadvantage of rendering the patient unconscious, which is not justified for many of these very minor procedures, and the rate of recovery depends upon the amount of drug used, the rate at which it is injected, and the exactness of the venous puncture; any or all of which factors may be misjudged, leaving a drowsy patient who is quite unable to depart from the surgery under his own volition in less than an hour. Trilene, I thought, would solve these difficulties; for not only is its analgesic property very high, but the rate of recovery is rapid—a most important desideratum. It remained, then, only to find the most suitable and inexpensive apparatus—an apparatus preferably which would allow variations in strength of mixture rather than a fixed-percentage apparatus, for the latter cannot be used for full anaesthesia, and it is obvious that the mixture which will suit a full-blooded navvy will not be suitable for a frail anaemic woman. I happened to read a description by Mr. G. Thompson, F.R.C.S., of Sydney, Australia (*Lancet*, 1942, **1**, 324), of how to modify Clover's or Hewitt's inhaler so as to be able to use it for all types of anaesthetic without its bag. So I got out my old Hewitt, which had not been used for many years (the bag of which had perished), and sent it to A. Chas. King, Ltd., to make the necessary alterations. These are an inspiratory valve at the external end of the bore, and an expiratory valve on the face-piece. I had the inspiratory valve made detachable so that the inhaler could revert to its original design (the expiratory valve can be closed). Incidentally, it is a useful piece of apparatus, which, with a double bag and mixing-chamber attachment, can be used to give gas, oxygen, trilene, or ether sequence. The only occasion on which I tried ether in this modified inhaler—to suture a perineum—I failed to induce anaesthesia.

My practice is to put 1 oz. of trilene or less into the inhaler and begin steady induction (too rapid induction has been reported to cause various cardiac irregularities), having carefully explained to the patient that he is to have complete control of the apparatus, and to breathe evenly and slowly as if falling asleep. As soon as the analgesic stage is reached, which is estimated by pinching or pricking the patient's arm, he is given the inhaler to hold and told to continue breathing. All the time I keep up a slow monotonous conversation by way of encouragement and to get the patient to relax. It is important that there should be an atmosphere of calmness with no distracting noises. I have given no premedication, but I believe that a preliminary small dose of one of the barbiturates, or even bromide or aspirin, an hour or more beforehand would increase the effect. The patient is told to lift the face-piece off the face during the non-painful procedures (tying the knots, threading the needle, changing the bougie, etc.), and then is allowed to take five to ten inhalations of the anaesthetic before the operation is continued.

Though my cases are limited in number I have not had any cause for alarm or even adverse symptoms. I have used this method for incising whitlows, passing bougies, catheterization, and, in fact, for any painful procedure. I have also used it in midwifery and for suturing the perineum, but in these cases I have allowed the midwife to increase the strength up to loss of consciousness, interrupting the inhalation during the non-painful manipulations. For circumcision in infants I use a few drops of trilene on a piece of gauze laid over the baby's face, and wait a few moments for crying to cease and automatic breathing to begin before snipping off the prepuce. As this is the only painful part of the operation, no more anaesthetic is given.

All patients are in the recumbent position on the examination couch, and are so kept while I put away my instruments and clear up the mess. Then they are made to sit on the couch for a few moments before putting on tie, collar, etc. It is hardly necessary to say that dentures and all tight clothing are removed as in any other anaesthetic procedure, and no female is put through this process without a relative or friend of hers being present throughout the whole procedure.

Although the success of this method is largely due to the marked analgesic properties of trilene, there would appear to be some additional factor, which is probably a conversion of passive receptiveness for anticipated pain, which causes rigidity, into active co-operation, with resulting relaxation—rather like the inhibition of the reaction to one stimulus which can be brought about by the imposition of a more powerful or more distracting stimulus; or, again, like the part of the mechanism of the Jendrassik reinforcement of the knee-jerk which diverts the attention. For, as one patient (a case of urethral stricture) remarked, he had been much too concentrated on breathing into the inhaler to pay any attention to anything that I was doing.—I am, etc.,

Keighley. WRIGHT LAMBERT.

? Abuse of Sulphathiazole

SIR,—Like Dr. E. Brauer (Sept. 8, p. 333) I have often wondered at the frequent use of sulphapyridine and sulphathiazole in infections where sulphanilamide is effective. This particularly applies to streptococcal infections of the throat and *B. coli* infections of the urinary tract. Sulphanilamide is both cheaper and less toxic.

My own experience with sulphapyridine and sulphathiazole, though, is that sulphapyridine is not only very much more unpleasant but more toxic. In fact I foresee the not-far-distant day when the magic 693 of yesterday will not be used.—I am, etc.,

Bungay, Suffolk. P. G. LEVICK.

Air Embolism

SIR,—The report by Dr. P. H. Dalgleish of two cases of air embolism following artificial pneumothorax refills (Aug. 25, p. 256) prompts me to send you the following account of what such an occurrence may mean to the patient himself, given to me by a man recently discharged from sanatorium. It was so striking that I had it recorded verbatim.

"It was my turn next for a refill, and I went into the treatment room with a sinking feeling. I usually felt like this beforehand, probably the dread of a needle being pushed in a tender spot. I stripped off, got up on to the couch, and put myself in the position the doctor liked to have me. He then felt for a likely spot in which to put the needle. He marks it with iodine, and then turns to prepare a 'local.' Although it was my 8th or 9th refill I still had 'locals,' because, so I understood, my A.P. was a poor one, due to what the doctor called 'frightful adhesions.'

The 'local' finished he turns to the sister saying he wants the longest induction needle she can find. He selects one, remarking as he always did on the poor condition of the points. The needle goes in, and I jump a little; I always did; to me it felt as if it was going through something it should not have done. It wasn't a pain but a dull ache for the fraction of a second. The air tube is fastened and the doctor sits on his little stool with the apparatus in front of him. I was not feeling myself, but I was able to watch the coloured

liquid in the 'U' tube. I knew that if I saw that bobbing up and down everything would be right. But no, it wouldn't move, and then all at once I started to feel strange. I felt frightened and wriggled about. The doctor says, 'What's the matter?' I opened my mouth to try to tell him I felt funny, but no distinct words would come out, just jumbled-up babbling. He pulls the needle out very quickly. I'm rolled from my left side on to my back. By this time the feeling seemed to have gone completely out of my body, and my sight had, too, apparently gone. It was as if I was in a white fog.

I felt something being forced between my lips, and in the distance I could hear someone saying: 'Swallow it, swallow it.' But this didn't mean a thing to me; I could feel it oozing out of my mouth again, and I could do nothing to stop it. By now I did not care much. My breathing was quite normal, but my heart I could feel beating at a terrible rate. The doctor was now standing by me, and it was not until many minutes had passed that I realized he was holding my wrist. This went on for some considerable time. Now he said: 'Grip my hand,' and I felt his hand hold my right. I managed to grip it slightly. 'Now lift your right leg.' Yes, I could move that. 'Now your left leg.' But that will not budge. He tried to make me grip his hand with my left, but that also will not move; in fact, I could hardly tell his hand was touching me.

I could hear a lot of rushing about, and I found myself suddenly surrounded by hot-water bottles. During this time there was much talking, but it always seemed so far off, until I heard someone say 'It's brandy, try and swallow it'; but it was given to me in drops, and apparently this went down without much effort; anyway I couldn't feel it running from my lips. I was left alone for some considerable time after this, and I tried to distinguish things in the treatment room, but the only thing I could see was something white, which I took to be a nurse's cap. Now the sister brings in some coffee, and, raising my head a little, holds the cup to my lips and I manage to swallow some of this. She tells me the porters are bringing a stretcher along and they will carry me back to my bed. This duly arrives, and after some considerable trouble I'm placed upon it and am taken to my room and put to bed. My pyjamas had been torn in transit, and I decided I was well enough to change them, if my room mate got them out of the drawer, which he did. But no, I had not sufficient control over my hands, and in the end my 'cubie' had to do it. My sight by this time was coming back, but everything was upside down, so I thought the best thing to do was to try and sleep. Incidentally, I had been in the treatment room 1¼ hours.

About 4 p.m. the medical superintendent came round and wanted to know all about it, but although I tried hard to speak my words kept getting mixed up, and so I gave it up. 'These little things do happen, you know,' he said, 'and we cannot continue with your A.P., but anyway you will get on just as well without it.' The next day two or three fellows who had troublesome A.P.s were told it was far too dangerous to continue with theirs."

He made a complete recovery and is to-day alive, well, and working.—I am, etc.,

BRIAN C. THOMPSON,
Tuberculosis Officer,
Middlesex County Council.

March Fracture

SIR,—In answer to my question "What are the M.O.s doing about the evils of stamping?" your correspondent "Pedes Plani Dolentesque" replies: "Nothing because there is nothing to be done." His reply also shows that the M.O.s of the Brigade of Guards are incapable of exerting their authority in a matter they consider harmful to the men under their medical care. Some men in other branches of the Service are not so complacent and carry out the instructions of the drill book in a satisfactory manner. On the other hand, drill sergeants are teaching men to stamp and even to "smash the concrete" in doing so, and with harmful results. Stamping being an "integral part of the Brigade particularly" sets a bad example of want of discipline to the rest of the Army. It is a pity because it is a harmful, inelegant prancing about by over-drilled guardsmen.—I am, etc.,

Stanmore. G. LENTHAL CHEATLE.

Marching on Rubber

SIR,—I have no doubt but that the Army authorities have considered the issue of rubber-heeled ammunition boots to the soldier instead of the present iron-shod variety, and that only wartime scarcity of natural or synthetic rubber prevented its adoption.

All American Army soldiers are issued with rubber-heeled boots. I discussed the subject with some of them just before D Day, and they assured me that they can do the longest marches without foot fatigue or blisters. The particularly annoying blister around the edge of the heel, so often produced by long marches on hard roads when wearing iron-shod heels, is unknown to them. At that time I followed their example and had my marching boots converted to rubber heels, and have never had a blister since.

The effect on regimental foot drill following the adoption of rubber heels would be to make it comparatively silent—a rather revolutionary change. Whether the introduction would reduce the incidence of march fracture or not I cannot say, but it would most certainly add greatly to the foot-comfort of the soldier.—I am, etc.,

Edinburgh. I. G. CAMERON.

Milk and Adjectives

SIR,—The pros and cons of milk safety, purity, or cleanliness are argued *ad nauseam*, till some readers must feel, "Why drink milk at all whatever the adjective?" If pure milk means only an unadulterated product, clean milk only one free from dirt, and safe milk one in which living disease germs do not flourish, cannot the public have such elementary virtues without highfalutin and meaningless names like "accredited" being attached to the article? As doctors must, more than ever before, be teachers in the brave new world, and as they do know more of tuberculosis, typhoid, etc., than other folk, it is well that Dr. Hawthorne should once again remind us that it is simple duty to our patients in every house we enter to assure ourselves that no one is being slowly and deliberately poisoned by the consumption of milk that is *unsafe*.—I am, etc.,

Moor Park. ESTHER CARLING.

Climate and Civilization

SIR,—Dr. Kenneth Black's letter (Sept. 8, p. 334) raises an interesting point. Though it is true that tropical and subtropical climates do not appear able to maintain a high degree of civilization for any great length of time, yet it is equally true that throughout the ages they have acted as nurseries for culture. For the New World there were the Aztecs in Mexico, the Incas in Peru, and the Mayas of Central America; in the Old World, to mention only a few, there was an advanced civilization at Mohenjo Daro, in India, at the same time as the civilizations of the Nile and the Euphrates were beginning to flourish. Subsequently, civilizations spread progressively westward to colder climates—Greece, Rome, Western Europe, and, finally, North America.

Many of these early races—e.g., the Mayas, Aztecs, and Greeks—originally came from colder climates, and the process seems to have started when the warmer and kinder climate gave more leisure for an originally strong stock to progress toward civilization. In subtropical and temperate climates I think it still remains open to question whether the ultimate and apparently inevitable enervation is directly due to the warmth of the climate or to the soft living produced by civilization itself.—I am, etc.,

Newbury. T. NORMAN.

Premedical Zoology

SIR,—Referring to the interesting article by Abercrombie and Johnson on this subject (Aug. 25, p. 262), may I suggest an important illustration of the principle of giving preference to those aspects of zoology that have a human relationship. The morphology and kinetics of quadruped, monkey, ape, and man might form the groundwork for studying the maintenance of posture and good skeletal form in the human being. Posture maintenance in the quadruped is a very different problem from that in the monkey and ape; and the ape differs from completely orthograde man largely in the extent to which the arms are used for suspension and support of the body weight. Not that man's orthograde nature should be made an excuse for his greater susceptibility to postural degeneration; but we need to give much greater medical attention to the subject. In accordance with another principle recommended by Abercrombie and Johnson, this zoological approach should be co-ordinated with the subsequent study of postural orthopaedics, which is hoped will at last be incorporated in standard medical education. Up to the present medicine has sadly neglected the everyday mechanics of human physiology.—I am, etc.,

Birmingham. E. H. WILKINS, M.B., D.P.H.

Remissions in Disseminated Sclerosis

SIR,—While remissions are a well-known feature of disseminated sclerosis it is rarely that one sees reports of individual cases of prolonged remission or of a series of such, giving one an average idea of what can and does happen to many cases of this disease. The following account, therefore, of a case in which diplopia was the only subjective symptom and absent abdominal reflexes the only objective sign, and in which there has been a remission for 13 years, may be of interest.

Mr. X., aged 26, came in 1932 complaining of slight double vision only that morning. He felt perfectly well otherwise and there was nothing of interest in the history. Examination showed only absent abdominal reflexes. His vision was slightly blurred, but 6/6 both eyes; fundi normal, no ocular palsy noted. The visual disturbance had disappeared in 12 hours. Blood Wassermann was negative. The late W. Adie saw him on the next day, and reported that he could obtain just the slightest flicker in the abdominal reflexes and nothing else. He dubbed him "D.S. suspect," but said, "I am afraid further troubles are inevitable."

The patient returned for a quite trivial complaint in 1945, when he reported that he had had no further trouble. On examination the only sign was still absent abdominal reflexes. Knee-jerks equal and active, no Rombergism, plantar reflexes flexor. His fundi showed some temporal pallor, more marked in the left eye.

It is always a difficult problem to give any prognosis in such cases and, as Walshe[1] says, "to cloud with gloomy apprehensions the life of a young subject who may have many years of normal life before him demands careful thought." The patient whose case is quoted above had recently married. Should one have been justified in advising him against marriage? I temporized by stating that in 13 years, so far as one could judge, there had been no progression of the disease.

The incidence of disseminated sclerosis in the Forces during the present war would be of the greatest value and interest. I had recently seen three cases in which no previous symptoms had been noted before Army training. Here the question arises as to how fatigue, both mental and physical, can and does precipitate crises in this disease. One therefore wonders if some clue could not be obtained, by the back door as it were, to the aetiology of the condition. What are the metabolic effects of fatigue, what the pathology or the biochemistry? What might fatigue so considered be capable of activating?

No evidence has been adduced for accepting the infective theory, or if so, as Collier[2] remarked, it behaves like no other infective process. Indeed, it resembles more the crisis of diabetes as precipitated by extraneous infections, although in disseminated sclerosis it may be not only febrile illnesses but injuries which disable the patient for a very short period only, or surgical interventions of all sorts not necessarily serious in themselves. I therefore feel that a more detailed study of the causation of exacerbations might lead to some progress in the knowledge of the aetiology at the moment completely unknown.—I am, etc.,

Highgate, N.6. W. LEES TEMPLETON.

REFERENCES

[1] F. M. R. Walshe, *Diseases of the Nervous System*, p. 177.
[2] *Price's Medicine*, p. 1654.

Chronic Regional Ileitis

SIR,—I read with interest the case report of Drs. O. Wilson and T. D. Culbert (Sept. 8, p. 332). Characteristically their patient presented symptoms of intestinal obstruction relieved by a timely resection of the stenosed segment of gut. I think, however, the available evidence weighs heavily against their assumption that regional ileitis is a new disease and a rare one. They will find the report of a similar case to their own by Norman Moore (*Trans. path. Soc. London*, 1882–3, **34**, 112). In the ensuing fifty years papers by Braun (1909), Dalziel (1913), Moschowitz and Wilensky (1923), and Crohn *et al.* (1932) are milestones marking the gradual recognition of this lesion as a clinical entity. That of Crohn and his collaborators attracted so much attention that more than one thousand cases were reported from all parts of the world in the decade following its publication—a fact which dispels the concept of rarity. Even so, it is probable that some examples still escape record, because men hesitate to report cases of doubtful aetiology, preferring the cast-iron type of lesion to some *terra incognita*.

Regional ileitis, then, is an old disease with a new name—or names, for few morbid processes have acquired such a medley of synonyms, none of which has thrown light on its causation. As to this, Drs. Wilson and Culbert quote from an early paper of mine an opinion based on the naked-eye appearance of the lesion in the theatre. There it looks all over like an infective process, and I am still of the same opinion after further experience of it. But the authors of the present report regard some vitamin deficiency as the primary causal agent—in particular, vitamin C. This seems improbable in view of the sporadic incidence of regional ileitis. By analogy with a typical deficiency disease—e.g., pellagra—it should appear in epidemic form. Though far from rare, the lesion is not common enough to arouse suspicion of vitamin-lack in the community.

Lastly, the outline of a presumed case of acute ileitis treated solely by dietetic measures without abdominal exploration suggests that the precise diagnosis could be only a matter for conjecture. The resolution of a palpable mass during the administration of a daily dozen oranges raises some doubt whether this retrogression was truly *post hoc propter hoc*. Is it possible that the patient's "extraordinarily lax abdominal walls" had their counterpart in a similar laxity of her abdominal mesenteries, and that a self-reducing volvulus or intussusception accounted for the disappearance of the mass?—I am, etc.,

Ashton-under-Lyne. F. G. RALPHS.

The Filigree Operation

SIR,—Without entering into the merits or demerits of the filigree operation in the recent correspondence between Squad. Ldr. J. B. Kinmonth and Mr. W. Pickup Greenwood, I would like to mention that I published a case in the *B.M.J.* of April 12, 1924, under the title. "Repair of a Recurrent Inguinal Hernia by Means of a Gauze Filigree." I believe that this type of filigree inserted as described by me has many advantages over the metal filigree. I envy Mr. Greenwood his opportunity to have operated on 80 cases since 1938, in some of which I feel this method could have been used.—I am, etc.,

Durban, S. Africa. D. O'DONOVAN.

End-to-end Anastomosis in the Small Intestine

SIR,—I was very interested in Major J. Seton Pringle's description of end-to-end anastomosis of the small intestine (Aug. 25, p. 256). I do not know if his is the first record of the use of this method in the human subject, but some of your readers may be interested to know that this method was taught by J. G. Wright, F.R.C.V.S., Professor of Veterinary Surgery, University of Liverpool, some thirteen years ago when he was at the Royal Veterinary College, London.

I reported the successful use of this method in the dog in a communication to the *Veterinary Record* in 1939.—I am, etc.,

Basingstoke. W. R. TURNBULL.

Doctors and the Social Trend

SIR,—What I thought when I read Dr. Shackleton Bailey's really admirable letter (Aug. 18, p. 235) has since been very aptly put by two other writers—namely, that Dr. Bailey has shown us the way out in one of the most constructive and understanding letters that has appeared in our *Journal*, and that it is a pity such clear thinking is not more common.

Only one statement in that letter needs modification—that no one can now fail to discern the signs of the times. Apparently there are a number, and some have since put their pens to paper. Dr. Duckworth, for instance (*Supplement*, Sept. 1, p. 55), tries to prove that the public gave no decided answer in favour of a whole-time National Health Service. He quotes Lord Quickswood in the *Sunday Times* in the argument that by proportional representation the Conservative and Liberal members together would have just outnumbered the Labour members. He makes the unjustifiable assumption that all the Liberals would be opposed to such a service. But in one of the main Liberal organs (*News Chronicle*, Sept. 7) their spokesman, A. J. Cummings (and who should know better than he?), states that in the main the Liberal vote "was a left vote." And since we are quoting peers, at the highest level, let me remind him of the statement of Lord Cranborne, Leader in the House of Lords of the Conservative Party—a party, incidentally,

which opposed proportional representation. Lord Cranborne said (Lords, *Hansard*, col. 47 of Aug. 16): "Whatever our personal views, we should frankly recognize that these proposals were put before the country at the recent General Election, and that the people of this country, with full knowledge of these proposals, returned the Labour Party to power. The Government may fairly claim that they have a mandate to introduce these proposals. I believe that it would be wrong . . . for this House to oppose proposals which have been definitely put before the electorate. Moreover . . . it would be an error of the first water." This, coming from such a source, should be a warning to the B.M.A. not to commit mass harakiri. Furthermore, it seems safe to assume that if those disenfranchized by the hurried election, mostly industrial workers and members of the Forces, had been able to vote, the swing to the left would have been even more pronounced.

Dr. Harrower (Sept. 1, p. 302) is sure that "the medical profession, if united, can defy anything of which it does not approve." Supposing it were true, which it is not, that in that case we could act as dictator against the wish of the people, was the medical profession ever united? Far less so on these issues than on most. Is she aware, for instance, of the great extent of left sympathy among medical students, in the North, in the Midlands, and in London? They will become doctors during the present Government's term of office. Or of the very recent vote of the British Medical Students' Association on this point? Or of the fact that of the 13 medical M.P.s in the new Parliament 8 are members of the Socialist Medical Association? Or that a very able and respected member of our profession sits on the Executive Committee of the Communist Party—a party which includes a considerable number of doctors?

Compare all this writing on the wall with thought inside our profession at the time when many of us were still students, and we can better grasp the social trend among an ever-growing number of doctors at the present day—doctors, that is, who try to adjust their ideas of historical evolution in the same way that they strive to keep up to date with medical advances.

What worries me is how the Association is going to co-operate fairly and squarely with Mr. Bevan through the medium of leaders most of whom have already shown their hand as opposers of all but what Dr. Bailey so aptly calls "a Conservative filtrate of socialist doctrine." The public, it will be remembered, turned out of office, with no uncertain vote, and even in such a stronghold as Birmingham, most of these filtrate appeasers. They therefore have a clear field. But have we?—I am, etc.,

London. P. G. S. DAVIS.

SIR,—Dr. W. B. Pemberton (Sept. 1, p. 302), after going into the matter "with various sections of the community," has got down to brass tacks and decided that the minimum terms under which a "general practitioner of some years' standing" might accept State service include a salary of £1,250 a year with travelling expenses, and a pension of £500 a year at the age of 65. Though he does not say so, it is presumed from the context that this is the maximum salary to which a general practitioner may aspire.

Does Dr. Pemberton really think that the practitioner "of some years' standing," on duty 7 days a week and 24 hours a day, will be sufficiently remunerated by £1,250 a year? Does he forget that the pound to-day is equal in purchasing power to 8s. 4d. in 1914? How is he going to educate four children—i.e., send them to a public school and university? Perhaps he thinks that no medical practitioner should have any children, or if he does that they should attend a State school and that their education should end there. Then, again, is the pension of £500 a year after 65 (how many general practitioners will reach 65?) to cease with his death, and is his wife to live on the old-age pension should she survive him? One cannot but wonder regarding the type of man such financial prospects are going to attract into our profession.

The Goodenough report on medical schools recommends that the standard of training of medical students should be that for a university degree. How many parents who have themselves had a university education will advise their boys to undergo a hard training of six years' duration with such prospects at the end of it? I have not met a single medical man who will do so. Has anyone else? There is no doubt, however, that if the Government wants a cheap medical service it will get it and the men to work it. But it cannot have it cheap and good.

Whether the new service is a salaried one without any free choice of doctor, or whether it involves merely an extension of the panel system to the whole population with free choice retained, in my opinion matters little, provided remuneration is adequate and other terms and conditions of service fair. The terms outlined by Dr. Pemberton are grossly inadequate and are fair to no one, not even the patient.—I am, etc.,

London, W.C.1. F. J. BROWNE.

SIR,—Dr. Hugh Gainsborough's letter (Sept. 8, p. 344) aptly remarks how his years in the E.M.S. have taught him the pleasure of whole-time medical service. If a consultant of his standing comments on it, it will be echoed by a number of younger specialists in the E.M.S. and Forces who previously would have struggled to keep up appearances of a "successful consultant" for a number of years. How many medical research problems have been shelved, indefinitely, for the necessity of building up a private practice. It is the merit of the E.M.S. and of the men who created it to have supplied consultants and specialists to people and districts where from the private-practice point of view their permanent residence would not have been justified. Moreover, the E.M.S. has given the pattern for the new National Health Service. Dr. Gainsborough rightly calls for more understanding of inevitable social trends by the medical profession—or as it was said two thousand years ago: "Can ye not discern the signs of the times?" (Matt. xvi, 3).—I am, etc.,

Botleys Park. H. W. GILLESPIE.

SIR,—In the course of a letter on the prospective reorganization of the medical services Dr. N. P. Henderson says parenthetically that a full-time medical service has failed "to a large extent in Russia." What grounds are there for this statement? The most complete study on Russian medicine, that by H. Sigerist (*Socialised Medicine in the Soviet Union, 1937*), gives factual data which suggest that a full-time medical service has been exceedingly successful. The Anglo-American surgical mission which visited the Soviet Union last year hardly reported adversely, judging by the articles that appeared in your columns and elsewhere. Nor is the failure of Soviet medicine apparent in the sober and factual accounts that the most recent investigators, Prof. E. D. Adrian and Prof. Arnold Sorsby, contributed to *Nature* of Aug. 25. What is the evidence on which Dr. Henderson bases his opinion and what are his criteria of success and failure? Is his oracular pronouncement based on facts apparently exclusively in his possession or is it mere irresponsibility?—I am, etc.,

Highgate Hill, N.6. L. FIELDMAN.

A Plea for the Young Specialist

SIR,—It is generally agreed that there will be a shortage of specialists for some years, and that it will prove very difficult to fulfil in an efficient manner the demands which any National Health Service may make.

The hardship of the young medical officer in the Services who has specialist ambitions but who has been prevented from taking a higher qualification owing to the "exigencies of the Service" is also recognized. At present, if he has joined one of the Services in 1940 or 1941, but is only 29 years old, he is in the position that many months will elapse before he is demobilized. During his time in the Services he may have gained considerable specialist experience and may even have been graded as a specialist, but in competition with his civilian colleagues of the same age he will be at a serious disadvantage when the time comes for him to apply for some specialist appointment in civil life, as he will not possess the necessary higher degrees. Would not the following scheme provide one method of overcoming both these obstacles?

1. The scheme would be applicable only to medical officers who had been at least three years in one of the Services.

2. In both Home and Overseas Commands a list should be drawn up of those medical officers who wish to sit an examination for a higher degree. This degree must be of sufficient standing to give them an opportunity to apply for any specialist appointment which (we hope) will be advertised only when demobilization becomes more general.

3. The higher medical authorities of the Services and the Central Medical War Committee together would determine how many of these younger men were replaceable by civilian specialists, who would be called up for one of the Services.

4. Once this total had been determined, allocations would be made to the various Commands. In the event of an insufficient number of replacements being available for the demands of the scheme a ballot would be taken.

5. The successful medical officer would be allowed a three-months period of study leave on full pay and allowances. During this time he would be required to sit the recognized examination.

6. Should he be successful in his examination he would have the option of being placed in Class B and of securing demobilization. If he failed he would continue his Service career.

Surely now that hostilities are over the demands of the Services are not so great, and after an experience of nearly six years as an otologist in the Army I am convinced that it is these younger men who have been most severely penalized in their medical careers. The transfer to Class B of the candidate who passes the examination certainly places a premium on examination results, but that is inevitable. The fact that early demobilization can take place only by this means will prevent the scheme becoming a "racket." Once the successful candidate has been demobilized, every encouragement should be given him to take up a post such as a registrar in one of the larger hospitals under the Government rehabilitation scheme in order that he may widen his knowledge of his specialty beyond the rather restricted field that the Services give. Similarly, during his period of study leave no opportunity should be lost to visit the civilian hospitals.

Even if the medical officer is not successful he will have gained a lot, and will be more prepared to resit his examination when his turn comes to be demobilized with his proper group. Because of the number who may wish to take advantage of the scheme, it will probably be found that only one attempt at passing the examination can be allowed to each medical officer, but at any rate he has had a chance to catch up with his civilian colleagues.—I am, etc.,

Aberdeen. E. G. COLLINS.

Bitterness

SIR,—In the medical press of late there have been letters from Service doctors which savour of the bitterness many of them feel about their present circumstances and their future. In the Army there are some reasons for this, particularly between those who volunteered (T.A., S.R., and others) and those conscripted, and also towards young civilians who have served in the E.M.S. and private practice. Perhaps the lot of young doctors who volunteered and have spent all the war as battalion and field ambulance officers while their contemporaries stayed as civilians to gain some higher qualification and later entered the Army as specialists in a higher rank is worse than those of us who in middle age have lost our well-established practices. Let us hope that remedies will be found so that these grievous feelings may not be carried forward to spoil the team-work needed from our profession in the difficult play that lies ahead of us, for bitterness is bad and a hindrance.

Most of us who have been in the Services have gained much that outweighs material loss and even professional advancement. We have met some really fine men we would not have come across otherwise. Our consciences are quiet on the matter of what we thought was our duty. Many of us have been privileged to feel in times of military success and adversity that we were a small part of the national team on the field. Our casualties compared with the combatants have been relatively small in killed and wounded, and we have indeed to be thankful that the sea or six feet of African sand or European earth has not been the lot of most of us. Despite all the irritations and frustrations that I in common with most medical officers have felt during service, I know that I owe much to the Army. I may be accused of being more fortunate than the majority, for in 5 years and 11 months of service (mostly over-seas) I have had 2 years and 11 months first-class surgical work with excellent equipment. During the remaining 3 years such clinical work as I had to do touched rock-bottom with meagre equipment and under conditions that were unnecessarily squalorly. For 15 months my duties were concerned with P.T., games, and those of a company officer. However, even the doldrums of transit camps and troopships can be put to good use in writing papers, or even books, and in reading (congested humanity permitting).

Let us hope that those in charge of hospital and other appointments will do their utmost to sweeten the bitterness by giving a good chance, particularly, to the released M.O. whose patriotism and altruism led him to volunteer for the Services before he had taken the higher qualifications he had planned in peacetime. Also that public authorities may be sympathetic and find appropriate accommodation where the "released" doctor may live and practise.

On release from the Service it is, I think, considerably harder to resist bad feeling when unable to find accommodation in which to live and practise.

London. H. B. STALLARD, Major, R.A.M.C.(T.A.).

Medical Photography

SIR,—I have read with great interest the article on medical photography in hospital (Sept. 8, p. 328).

There is no doubt that in most hospitals throughout the country medical photography is done under the most difficult of conditions. Recently I have been conducting some investigations on the testing of the peripheral circulation by means of intravenous fluorescein. In order to keep a record of these cases it has been necessary to take photographs with kodachrome films or films of a like nature. In addition, in order that the photographs should be reproduced exactly an expert photographer is needed with a good camera and all the extra appliances which are required in the taking of a good film. Such conditions are impossible to obtain in a hospital these days. In carrying out the photography of my cases I was fortunate to have the collaboration of a local photographer. After explaining to him what was needed, he entered into the work with the greatest of enthusiasm.

I feel sure that an Institute of Medical Photography is urgently needed where photographers can be trained to carry out this expert work. These men could then be available to the hospital in the town where they reside. In addition, a photographic room should be available in every hospital, where electric fittings, lighting units, and all the extra requirements for good photography are at hand, and where the processing could be carried out.—I am, etc.,

London, W.1. MAURICE LEE.

Banting Memorial Diabetic Convalescent Home

SIR,—The debt of life and health that the diabetic world owes to Banting's discovery of insulin is beyond words, and diabetics in this country want to recognize it adequately by a practical memorial. The Diabetic Association, a combination of lay patients and interested doctors, is planning to honour his memory by establishing a convalescent home, badly needed but so far non-existent, where diabetics leaving hospital after acute treatment can be fully restored to normal health by proper diet, insulin, and diabetic training. It will serve, too, as a holiday home for diabetic children.

This home must be started by voluntary effort. We have already collected £8,000, but we aim at a worthy memorial, and need £50,000. The people whose pleasure and duty it is to provide this money are obviously diabetics, especially the rich, who know the blessings of insulin for themselves or loved members of their families. It is difficult for us to get in touch with them, and there could be no better means of contact than the doctors who treat diabetics. We therefore beg, through the courtesy of your *Journal*, such doctors to acquaint their diabetic patients of this memorial scheme to Banting, and to urge them to support it handsomely. Subscribers should communicate with the Diabetic Association, 9, Manchester Square, London, W.1.—I am, etc.,

London, W.1. R. D. LAWRENCE, Chairman.

Obituary

JAMES HENDRY, M.B., F.R.F.P.S., F.R.C.O.G.

We regret to announce that Prof. James Hendry, who held the Regius Chair of Midwifery at Glasgow University since 1943, died on Sept. 9 in his sixtieth year. He was chairman of the medical committee of the Scottish Advisory Committee to the Nuffield Provincial Hospitals Trust, and a member of the Medical Advisory Committee to the Secretary of State for Scotland. From 1927 to 1943 he was Muirhead Professor of Obstetrics and Gynaecology at Glasgow, and on his election to the Regius Chair he gave up private practice to become medical director of the Glasgow Royal Maternity and Women's Hospital.

James Hendry was born at Beith in Ayrshire on Sept. 25, 1885. He entered Glasgow University from Beith Academy as an arts student in 1903. After a distinguished career in science and medicine he graduated M.A., M.B., Ch.B., and B.Sc. in 1910, and then broadened his experience by a prolonged course of postgraduate study abroad. For two years he undertook research in Germany and Austria, and on returning to Glasgow in 1913 from the Clinique Tarnier in Paris received an appointment at the Royal Infirmary. When war broke out in August, 1914, Hendry was a captain in the University Contingent of the O.T.C., holding the post of adjutant for two years, and for this service was awarded the M.B.E. He served in France with the R.A.M.C. from 1916 until the end of the war, when he retired with the rank of major, and was appointed first assistant to the Muirhead Professor of Obstetrics and Gynaecology at Glasgow and resumed his work as operative surgeon and clinical teacher. Soon afterwards he became senior assistant physician to the Royal Maternity Hospital, and was promoted later to be chief obstetric surgeon there and chief gynaecological surgeon at the Royal Infirmary. He was elected F.R.F.P.S. in 1923.

Hendry had been a member of the Glasgow University Court since 1939, and undertook many administrative duties on behalf of the university. He was a Foundation Fellow and member of the original Council of the Royal College of Obstetricians and Gynaecologists, and was the sole representative of that branch of medicine on the Interdepartmental Committee on Medical Schools (the Goodenough Committee), which reported in 1944. His gift for teaching and administration marked him down for appointment to the Regius Chair two years ago. Hendry's capacity for work and eagerness to help in good causes were a byword in Glasgow and far beyond. His mind was constantly occupied with the problems of undergraduate and postgraduate teaching. When not in committee, in the classroom, or in the operating theatre, or examining candidates, he would visit Edinburgh for work on behalf of the Central Midwives Board for Scotland, of which he was deputy chairman, or would travel by night to London to give his services in wider spheres.

Hendry joined the B.M.A. in 1913, and held office as vice-president of the Section of Obstetrics and Gynaecology at the Annual Meetings in 1923 and 1939. He examined for the Universities of Aberdeen, Durham, and Edinburgh, and for Queen's University, Belfast, and he was joint author of *Midwifery Notes for Students* (1920), and of the well-known *Combined Textbook of Obstetrics and Gynaecology*, first published in 1923 and now in its third edition. He had been president of the Obstetrical Societies of Edinburgh and of Glasgow.

We are indebted to Mr. EARDLEY HOLLAND, P.R.C.O.G., for the following appreciation:

James Hendry was an important man in British medicine, and was one of the rare people who might be said with truth to have no duplicate. It is uncommon to combine great clinical skill with academic gifts and powers of exposition, in speech and writing, of a high order. This was the mingling of qualities that Hendry possessed, and when the proper authorities in Glasgow decided that the largest maternity hospital in Britain—the "Glasgow Royal"—should be in the clinical charge of one "chief," who should also be the director of teaching in the university, Hendry was there, ready and fully armed at all points. Whether he was made for the post or the post for him must remain a matter for conjecture. It was a radical change from the old tradition of hospital staffing, and it was perhaps fitting that the trial should be in the country of the seer who worshipped the leadership principle. Hendry quickly won the affection of his junior colleagues and became the beloved chief of this immense hospital and teaching unit. He gave valuable help in working out for the Department of Health for Scotland the details of the improved maternity service embodied in the Maternity Services (Scotland) Act, 1937; he was also a member of the scientific advisory committee that published the report in 1943 on infant mortality in Scotland. Hendry was chosen to be the representative for his branch of medicine on that small but highly important body the Interdepartmental Committee on Medical Schools which, under the chairmanship of Sir William Goodenough, reported so resoundingly in 1944. The many long meetings in London, spread over the two most difficult travelling years of the war, in addition to heavy duties to patients and students in Glasgow, must have been a trial of strength even to so robust and equable a man as Hendry. His untimely death at a time when the teaching and practice of medicine are alike in the melting-pot is a sad loss to British, especially Scottish, medicine, and most of all to the City and University of Glasgow.

Dr. R. A. LENNIE, chief obstetric surgeon, Glasgow Royal Maternity and Women's Hospital, writes:

In the death of James Hendry Scotland has lost one of her pre-eminent medical men and the world of obstetrics has suffered a grievous loss. His forceful personality was dedicated to the betterment of obstetric teaching and practice, and he was unswerving in his aims to this end. His energy and capacity for work were prodigious and caused amazement to his friends. Apart from his professional duties, which were his first interest and concern, his vast experience and well-balanced judgment were recognized by his country and his university, both of which valued his advice and guidance in matters pertaining to his specialty. He was held in the highest respect and regard by his students and house-surgeons, many of whom may well bless the day they came under his influence and teaching. Unsparing of himself, he expected a high standard of efficiency and sense of duty from his juniors, but his apparent austerity was tempered with an underlying friendliness.

Throughout the war years his sense of pride in having all three sons serving was leavened with the knowledge that one was wounded and a prisoner. During the period of uncertainty his suffering and anxiety were bravely masked, and he carried out his multitudinous duties with outward fortitude. This was typical of James Hendry, and it was fitting that his last months of life were brightened by a happy reunion.

His main interests lay in his profession, and any leisure moments were devoted to problems of teaching and the furtherance of his ideals of an adequate maternity service. He thus had little time for recreation and seldom seemed to relax. He thoroughly enjoyed, however, the good fellowship and social attractions of an obstetric congress or a meeting of the Gynaecological Visiting Society. With a strong sense of humour he was a good raconteur, and was never seen to better advantage than at a dinner with his intimates and fellow-obstetricians from further afield. He had many friends throughout the kingdom, and many will mourn the passing of Jimmy Hendry. As his colleague in hospital over many years, I shall always remember a friendship which ripened as it endured. He has died at the peak of his power, and the country can ill afford to lose a man of his calibre and attainments, while so many new issues are at stake. He leaves a memory which will be an inspiration to those who follow him.

Dr. JAMES SMITH MCCRACKEN, who died at Melrose on Feb. 22, was in his 84th year. He was in practice in Newcastle-upon-Tyne for nearly 40 years. One of a family of eight, he was the second son of James McCracken, farmer, of Altimeg, Ayrshire, and Blackhalls and Greenleighton, Northumberland. His father was a noted breeder of black-face sheep, and he was descended from a long line of Galloway farmers. A noted Covenanter, Matthew MacIlwraith, of Colmonel, was among his ancestors. No direct ancestor was a physician, but a collateral, Gilbert McCracken, took his M.D. at Edinburgh University in 1802. J. S. McCracken was educated at George Watson's College, Edinburgh, and Edinburgh University, where he spent a year in the Faculty of Arts before studying medicine; he graduated M.B., C.M. in 1885 and M.D. in 1906. He was physician and later consulting physician to the Fleming Memorial Hospital for Sick Children and visiting physician to the Newcastle Dispensary. He had a wide knowledge of English literature and a deep appreciation of poetry, and had acquired an extensive library during the course of his life and was something of a bibliophile. He had many fine editions, and format was of great importance to him, but he could quote appositely from a great range of poets, and there were many authors whose works he seemed to know in their entirety. He

collected everything, from china and stamps to flint arrowheads and prints. Of engravings, etchings, and mezzotints he had a specialized knowledge and a remarkable collection. He had a nice discrimination, and early in life he came to appreciate the great merit of Samuel Palmer's work. His literary and artistic tastes naturally influenced his approach to medicine; he was always original, and no textbook explanation of disease which ran counter to the clinical facts ever influenced him in making a diagnosis. As a diagnostician of the old school—the school which had perforce to dispense with most of the laboratory aids—he was supreme, and his approach to a problem was always through physiology. He was essentially the family physician, though he was often called on as a consultant, especially in the case of children, and was a first-class psychologist. He was scarcely influenced at all by the modern school of psychopathology, but a wide knowledge of literature and sympathetic observation of his patients gave him the requisite background of knowledge. Mrs. McCracken survives him. He had four sons, of whom three are members of the medical profession and one is the present M.O.H. for Newcastle. Three of his sons were on active service throughout the war of 1914–18; they all held combatant commissions. In the recent war two sons returned to the Army. One served with distinction as D.A.D.M.S. of the 50th Division in France at the Dunkirk evacuation and later commanded a field ambulance in the Western Desert. One son, Lieut.-Col. Angus M. McCracken, D.S.O., *M.C.*, died of wounds received while commanding a field regiment of the Royal Artillery at Mount Camino in Italy.

We regret to announce the death on Sept. 5 of Dr. HAROLD ERNEST WATKINS, of Newton-le-Willows, Lancashire, a past chairman of the St. Helens Division of the B.M.A. Son of John W. Watkins, M.D., he was born at Newton-le-Willows on May 30, 1868, and from Manchester Grammar School went to study for the medical profession at Owens College. After qualifying M.R.C.S., L.R.C.P. in 1889, he served as house-surgeon at the Manchester Royal Infirmary and medical officer to the Liverpool Farm School. He returned to his native place and became part-time M.O.H. to the Newton-in-Makerfield Urban District Council and medical superintendent of the isolation hospital and the maternity and child welfare clinics. Dr. Watkins had been for some years district surgeon to the L.M.S. Railway, and during the war of 1914–18 was medical officer to the Garswood Hall Military Hospital. After his retirement he continued to take a close interest in the work of the Newton-le-Willows War Memorial Hospital.

Dr. WILLIAM THOMAS, of Larkhall Rise, Clapham, died in Westminster Hospital on Sept. 7, aged 57. A student of St. Thomas's Hospital, he took the B.Sc.Lond. (with first-class honours in chemistry) in 1907, and after qualifying in 1915 proceeded M.B., B.S. in 1920. At St. Thomas's he won an entrance scholarship in natural science and the William Tite Scholarship, was demonstrator in chemistry and toxicology and in biology, resident anaesthetist, and casualty officer. During his years of practice at Clapham Dr. Thomas served as divisional surgeon to the Metropolitan Police, medical officer to the Post Office and the Board of Education, and medical officer to the Clapham General Dispensary. He had contributed to the *Transactions of the Chemical Society*, and published papers on road treatment in relation to fish life, diseases of trout, and pollution of streams. He joined the B.M.A. in 1920.

The following well-known medical men have died abroad: Prof. CARL VON NOORDEN, from 1906 to 1913 director of the First Medical Clinic at Vienna, and Honorary Fellow of the Royal Society of Medicine, aged 86; Prof. OTTO VERAGUTH, formerly director of the Institute for Physical Therapy at the University of Zürich and honorary president of the Swiss Neurological Society, aged 72; Prof. CESARE PEZZE, an eminent cardiologist at Milan, aged 70; Dr. MICHEL LÉON KINDBERG, the French phthisiologist, a few days after his liberation from a concentration camp in Germany, aged 62; Prof. FRITZ SEILER, director of the Medical Polyclinic at Berne; Geheimrat ADOLF DIEUDONNÉ, for many years professor of serology at Munich and author of a classical textbook on immunity; Dr. OTFRIED MÜLLER, formerly professor of internal medicine and director of the medical clinic at Tübingen University, author of an important work on capillary microscopy, aged 71; Prof. JOSEPH TRUMPP, a Munich paediatrician, and one of the pioneers of infant welfare, aged 79; Prof. GUSTAV ASCHAFFENBURG, formerly director of the psychiatric clinic at Cologne and founder of the *Monatsschrift für Kriminalpsychologie*; Dr. LUCAS AYARRARAY, ex-secretary of the National Department of Hygiene, Buenos Aires, aged 82; and Dr. LOGAN CLENDENING, professor of clinical medicine and director of the Library and Museum of the History of Medicine at the University of Kansas, vice-president of the American Association of the History of Medicine, 1942–3.

Universities and Colleges

UNIVERSITY OF EDINBURGH

Edinburgh University Court has appointed S. W. Challinor, Ph.D., B.Sc., Department of Bacteriology, and Harry Culumbine, M.B., Ch.B., M.Sc., Lieut.-Col., R.A.M.C., Department of Materia Medica, to Imperial Chemical Industries Fellowships for a period of three years.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

The Harveian Oration on "Rheumatic Fever and Heart Disease" will be delivered by Dr. John Parkinson at the College, Pall Mall East, S.W., on Thursday, Oct. 18, at 3 p.m.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Monthly Dinners

Monthly subscription dinners in the College will be resumed in October for Fellows and Members of the College, members of the specialist associations linked with the College through the joint secretariat, and their guests. The dinners will be held on the Wednesday preceding the second Thursday of each month. The dates for this year are Oct. 10, Nov. 7, and Dec. 12. Applications should reach the Secretary of the College, Lincoln's Inn Fields, W.C.1, one week before the date of the dinner, accompanied by the remittance of one guinea for each ticket required.

The Services

Surg. Lieut. W. J. Winthrop, R.C.N.V.R., has been mentioned in dispatches posthumously for gallantry, determination, and devotion to duty in H.M.S. *Campbeltown* in the raid on St. Nazaire in March, 1942.

Temp. Surg. Lieut. J. A. Cosh, R.N.V.R., has been mentioned in dispatches for good services in rescue work and fire-fighting after an explosion in a merchant ship in the Port of Bari on April 9, 1945.

Surg. Lieut. A. P. B. Waind, D.S.C., R.N.V.R., has been mentioned in dispatches for courage and devotion to duty during the defence of Calais in 1940.

The following appointments have been announced in recognition of gallant and distinguished services in Italy:

O.B.E. (Military Division).—Lieut.-Cols. E. C. Janes and J. S. McCannel, R.C.A.M.C.

M.B.E. (Military Division).—Majors R. Ferguson, W. M. G. Wilson, W. S. Gilchrist, and C. C. Henneberg; Capt. C. H. Conway, R.C.A.M.C.

The following appointments and awards have been announced in recognition of gallant and distinguished services in Burma:

C.B.E. (Military Division).—Brig. (Temp.) G. J. V. Crosby, T.D., R.A.M.C.

O.B.E. (Military Division).—Col. (Temp.) T. F. M. Woods; Lieut.-Cols. (Temp.) P. B. Longden, A. J. Martin, C. E. Roberts, and R. N. Tattersall, R.A.M.C. Col. (Temp.) M. S. Purvis; Lieut. Cols. (Temp.) E. J. Crowe and J. M. MacF. Drew, I.M.S. Lieut.-Col. (Temp.) J. Wakeford, S.R.M.C.

M.B.E. (Military Division).—Lieut.-Col. (Acting) D. A. Langhorne; Majors (Temp.) J. C. Gregory and J. S. McCrae; Capts. H. C. Campbell and R. G. McWhinney; Capt. (Acting) F. E. Hall, R.A.M.C. Major (Temp.) C. F. Vieyra, I.M.S. Capt. (Temp.) D. Singh, I.A.M.C.

D.S.O.—Brig. (Temp.) A. N. T. Meneces, C.B.E., R.A.M.C.

M.C.—Capts. G. K. Beatty, T. A. Taylor, and J. Weir, R.A.M.C.

Freed in the Far East.—Lieut.-Col. J. W. Malcolm, O.B.E., M.C., Major W. M. Stewart, and Capt. G. A. F. R. Gibson, R.A.M.C.

CASUALTIES IN THE MEDICAL SERVICES

Killed.—Capt. Albert Robson, R.A.M.C.

Wounded.—War Subs. Capts. T. P. Bliss, W. F. Carpenter, and R. E. Danckwerts, and Lieut. B. S. Crawford, R.A.M.C.

G. K. De Forest and L. M. Kerr (*Amer. J. med. Sci.*, 1945, **209**, 752) describe a small epidemic of streptococcal diseases among nurses attending a child with secondarily infected eczema who was a constant source of Type 14 haemolytic streptococci for many weeks. During a three-months period 50% of the nurses who attended the child became ill with sore throats or scarlet fever.

No. 35

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Sept. 1.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London), (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1945					1944 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	33	3	21	2	1	27	—	22	—	—
Deaths		—	—				—	—		
Diphtheria	377	18	144	97	15	445	6	147	88	15
Deaths	2	1	—	—	—	4	—	—	2	—
Dysentery	286	41	114	3	—	419	27	93	—	1
Deaths				1	—				—	—
Encephalitis lethargica, acute	3	1	—	1	—	1	—	—	—	—
Deaths		—					—			
Erysipelas			40	13	1			49	8	2
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				137					197	
Deaths	76	10	13	19	15	63	8	57	21	9
Measles*	851	48	56	28	2	1,669	27	65	39	16
Deaths	2	—	—	—	—	—	—	—	2	—
Ophthalmia neonatorum	59	4	11	—	1	59	2	20	—	—
Deaths										
Paratyphoid fever	13	—	5(B)	—	—	13	1	3(B)	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal†	265	9	5	4	—	297	13	5	—	2
Deaths (from influenza)	8	1	—	1	—	5	—	—	1	—
Pneumonia, primary			121	9				150	15	
Deaths		17		5	3		13		4	4
Polio-encephalitis, acute	3	—				7	1			
Deaths		—					—			
Poliomyelitis, acute	28	2	—	3	—	25	—	22	1	1
Deaths		—					—			
Puerperal fever		3	20		—		1	6		—
Deaths										
Puerperal pyrexia‡	142	12	12	3	—	132	2	10	3	3
Deaths		1					—			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	1,020	63	237	21	30	1,137	28	204	21	45
Deaths	—	—	—	—	—	1	—	1	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	9	1	2	1	5	10	2	4	14	1
Deaths	1	—	—	—	1	—	—	—	1	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	1,244	73	52	42	10	1,389	44	61	82	11
Deaths	4	—	—	—	1	2	2	1	2	—
Deaths (0–1 year)	341	44	44	28	26	305	23	109	39	25
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	3,869	543	477	153	98	3,649	414	569	170	106
Annual death rate (per 1,000 persons living)			10·8	9·9	§			13·1	11·0	§
Live births	6,479	796	828	485	240	6,167	410	822	339	227
Annual rates per 1,000 persons living			16 6	31·3	§			16·7	22·0	§
Stillbirths	219	25	23			216	12	23		
Rate per 1,000 total births (including stillborn)			27					27		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

§ Owing to movements of population, birth and death rates for Northern Ireland are still not available.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* there were 300 fewer notifications of measles than last week, 53 fewer of pneumonia, and 32 fewer of diphtheria; while the incidence of whooping-cough rose by 92, of dysentery by 54, and of scarlet fever by 19.

In Essex whooping-cough notifications rose by 36, and in Yorks West Riding they went up by 33. The incidence of measles was lowered throughout the country, except for a rise of 30 in Lancashire and an almost unchanged incidence in Kent and Essex, these three counties having 36% of the total notifications. In Lancashire diphtheria notifications rose by 20. Only 21 cases of acute pneumonia were notified in the combined areas of London and the south-east and south-west counties.

Increases in existing outbreaks of dysentery were responsible for the rise in notifications, no fresh outbreak being reported. The chief centres of infection were London 41, Lancashire 35, Surrey 26, Middlesex 16, Essex 15, Lincolnshire 12, Derbyshire 12, Yorks West Riding 11, Glamorganshire 11, Dorsetshire 10, Gloucestershire 10.

In *Scotland* dysentery notifications rose by 41. Other rises over last week's totals were scarlet fever 43, whooping-cough 26, measles 20, diphtheria 10. The increase in dysentery was mainly due to the cities of Edinburgh and Glasgow, where the cases rose respectively from 16 to 27 and from 27 to 43.

In *Eire* the incidence of diphtheria was almost doubled, increasing from 55 to 97 notifications. This disease is widespread, thirty-one registration areas being involved. A further large rise, of 39 cases, occurred in notifications of diarrhoea and enteritis; 113 of the total of 137 cases were recorded in Dublin C.B.

Week Ending September 8

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,151, whooping-cough 1,177, diphtheria 423, measles 538, acute pneumonia 268, cerebrospinal fever 25, dysentery 278, paratyphoid 12, typhoid 12, acute poliomyelitis 25.

Medical News

Dr. David Adler will give a lecture on "Plastic Surgery in Rio de Janeiro" in the British Council Theatre at 6, Hanover Street, London, W., on Tuesday, Sept. 25, at 4 p.m.

The 244th meeting of the Biochemical Society will be held in the Human Nutrition Research Unit of the Medical Research Council at the National Hospital for Diseases of the Nervous System, Queen Square, London, W.C., on Friday, Sept. 28, at 11 a.m.

The opening of the 104th session of the College of the Pharmaceutical Society of Great Britain and the presentation of prizes will be held at 17, Bloomsbury Square, W.C., on Wednesday, Oct. 3, at 3 o'clock. The President, Mr. James Clements Young, Ph.C., will give the inaugural sessional address.

At a meeting of the Society of Public Analysts and Other Analytical Chemists on Wednesday, Oct. 3, at 6.30 p.m. at the Chemical Society's Rooms, Burlington House, Piccadilly, W., Mr. Eric C. Wood, B.Sc., will read a paper on the theory of certain analytical procedures, with special reference to microbiological assays.

There will be a clinical meeting of the Medical Society of the L.C.C. Service on Thursday, Oct. 4, at 3 p.m. at Lewisham Hospital, S.E.13, when members of the staffs of Lewisham Hospital and St. Alfege's Hospital will demonstrate cases.

In January next, subject to certain formalities, the name of the Charity Organization Society (Denison House, 296, Vauxhall Bridge Road, S.W.1) is to be changed to the National Family Welfare Association. It will have affiliated to it family case-work agencies in most of the large centres of urban population. The first task of the representative council which is to be formed will be to assist, in close co-operation with the Marriage Guidance Council, in the formation of centres for the handling of domestic problems. The new name of the C.O.S. is intended to recognize how much of its re... activities are concerned with family case-work.

The annual general meeting of the Association of Industrial Medical Officers will be held on Friday, Oct. 19, at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C., at 2.30 p.m. The programme consists of private business followed by an address by Dr. J. C. Bridge, and by Mr. H. E. Griffiths, F.R.C.S., who will introduce a film on rehabilitation. After the meeting members will meet for dinner at the Trocadero Restaurant, 7 p.m. for 7.30 p.m., morning dress. Applications for dinner tickets, price £1 1s., to be made to Dr. W. Blood, Cadby Hall, Kensington, W.14.

The Royal New Zealand Society for the Health of Women and Children, otherwise known as the Plunket Society, has now reached its 28th year. It was founded by the late Sir F. Truby King, whose influence still persists and whose name is honoured year by year in the annual reports. The Dominion Council in its report for the year ended March 31, 1944 (Stone, Son and Co., Anzac Square, Dunedin), records that it has offered through New Zealand's representative in Washington to provide personnel, literature, and supplies for the relief and help of mothers and young children in war-ravaged and occupied countries. The Plunket Society has always regarded the educational side of its work as of the first importance, and grasps every opportunity to inform parents, school-girls, and the public generally on matters pertaining to the health of women and children. Many of its nurses are doing splendid work lecturing to groups of mothers on parentcraft, paying particular attention to right diet as one of the foundations of health.

More than 50 cases of tuberculosis have been discovered as the result of an *x*-ray survey of the inmates and employees at the San Quentin Penitentiary, U.S.A. The survey was conducted by the California Tuberculosis and Health Association with a 35-mm. *x*-ray unit, and an examination of the 3,415 films made showed that there were 7 cases of very advanced phthisis, 15 moderately advanced, and 32 minimal. In addition some 60 cases of abnormal cardiac conditions were detected.

The new wing of the Queen Victoria Hospital, East Grinstead, presented by the Canadian Government as a Canadian R.A.F. memorial, was formally handed over to the hospital on Sept. 5 by Mr. Frederick Hudd, Acting High Commissioner for Canada. The wing was built by Canadian engineers at a total cost of £60,000, and accommodates 50 patients.

At the last quarterly court of the Governors of the London Hospital it was announced that the London County Council has agreed that the hospital shall retain the annexe at Brentwood for five years from VE-Day. On Oct. 1 the number of beds in Whitechapel will be increased to 580, and it is hoped to add a further 70 later.

The King has granted authority to Andrew McDowall, M.B., F.R.C.S., to wear the Insignia of the Fourth Class (Civil Division) of the Order of Al Rafidain conferred upon him by the King of Iraq in recognition of valuable services rendered in his capacity of professor of surgery in the Royal Iraqi College of Medicine.

Lieut.-Col. T. H. Leggett, M.D., R.C.A.M.C.(R.), was recently appointed honorary medical adviser to the Commandery in Canada of the Venerable Order of the Hospital of St. John of Jerusalem. Dr. Leggett's home is in the city of Ottawa, and he is a past-president of the Canadian Medical Association.

Dr. Arthur George Southcombe, of the Palestine Government Hospital, Jerusalem, left estate in Great Britain valued at £20,685. He bequeathed £1,000 to St. Bartholomew's Hospital for the neurological department, and £1,000 to St. Bartholomew's Hospital Medical School.

The British Orthopaedic Association is meeting at the Royal College of Surgeons of England on Friday and Saturday, Oct. 26 and 27. Further information may be obtained from the secretary at 45, Lincoln's Inn Fields, London, W.C.2.

The issue of the *Schweizerische Medizinische Wochenschrift* for Aug. 25 is dedicated to Prof. Ernst Hagenbach, director of the surgical department of the Basle Children's Hospital, on the occasion of his 70th birthday.

The name of Dr. Archie Samuel Ellis, ship surgeon, s.s. *Tanda* (Eastern and Australian Steam Ship Company Ltd.), appears in a list of commendations for brave conduct when their ships encountered enemy ships, aircraft, submarines, or mines.

Statutory Rules and Orders, 1945, No. 1076, relating to handicapped pupils and school health service in England and Wales, has been issued for the Ministry of Education by H.M. Stationery Office, price 4d.

The King has appointed Leonard Anthony Paul Slinger, O.B.E., M.B., to be a Member of the Executive Council of the Island of Grenada.

Dr. P. S. Selwyn-Clarke, *M.C.*, F.R.C.P., Director of Medical Services, Hong Kong, has been appointed C.M.G. The appointment is to date from Jan. 15, 1945.

Dr. C. G. Kay Sharp, of Leeds, who has been a member of the council of the Royal Eye Hospital, London, for some time, was recently elected a vice-president of the hospital.

Prof. Gustav Roussy, member of the Institut de France and rector of Paris University, has succeeded the late Prof. Achard as general secretary of the Académie de Médecine.

Dr. C. H. Kellaway, F.R.S., has been elected Deputy Chairman of the Board of the Wellcome Foundation.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitiology Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

Ophthalmia Neonatorum

Q.—*Are 1% silver nitrate drops still the best routine prophylactic against ophthalmia neonatorum?*

A.—The prophylactic measures against ophthalmia neonatorum may be divided into pre-natal and post-natal. The importance of the pre-natal elimination of all vaginal infection cannot be stressed too much, nor are the precautions which should be taken during birth any less important. In particular the lids should be thoroughly cleansed *before the eyes are opened.* Where these details are thoroughly and conscientiously carried out the necessity for post-natal prophylaxis immediately the eyes are opened becomes less imperative. In such cases silver protein 10% should be sufficient. If there is any doubt about the condition of the vagina or the thoroughness of the cleansing of the eyes before they are opened, silver nitrate 1% should be used.

Precautions are necessary in the use of silver protein and silver nitrate. There have been substitutes for silver protein which have contained varying amounts of solvents to dissolve the active principle which are harmful to the eyes. Its use should not be prolonged. Silver nitrate is a powerful drug and should be employed with care. It tends to decompose into substances injurious to the eye on being kept too long and under the influence of air and light. The solution should be freshly made up every three weeks and kept in a yellow-coloured bottle with an efficient stopper, which should not be left out longer than is necessary.

Cerebral Diplegia

Q.—*A twin boy of 8 suffers from cerebral diplegia. He is quite intelligent, but has a spastic gait with spasticity of arms and hands. The main trouble which worries the parents is dysarthria. He can pronounce simple monosyllabic words and names, his hearing is unimpaired, and he understands and carries out so far as he is able all commands given him. What advice should one give the parents as to the best means of overcoming the speech difficulty?*

A.—Spasticity in cerebral diplegia may seriously affect the muscles of articulation, although in some children without any real intellectual impairment it is remarkable how well they may overcome the disability. What is worrying in this case is that speech at 8 years of age appears to be limited to monosyllables. It raises the question of what "quite intelligent" really means. A period of speech training by a speech therapist (see list published by Board of Medical Auxiliaries, B.M.A. House) would be well worth while, but the results will be disappointing unless intelligence is normal. This is a case for consultation at a children's hospital or with a children's physician.

Marriage and V.D.

Q.—*Should a woman insist before marriage on a negative Wassermann and, possibly, other reports from the man she is to marry? Many girls and women in the Services form attachments with men about whose antecedents they know nothing. It was different in the days when their brothers, or other relatives and friends, knew all that was worth knowing about any of the men they were likely to get acquainted with.*

A.—Many people will think that a woman should trust the man she proposes to marry, and it would seem that insistence by a prospective bride on an examination to exclude possible venereal disease is hardly likely to conduce to future marital felicity; much depends on how the man and woman regard these matters. Certain countries and States require a premarital examination, including a Wassermann or similar test, but British Service authorities have not considered such a procedure essential. In any event a negative W.R. does not exclude early communicable syphilis, whilst recent

penicillin or sulphonamide therapy might vitiate any clinical or bacteriological examination for the detection of gonorrhoea (should the man desire to conceal it).

As to the statement that "it was different in the days when their brothers . . . knew," a prospective bridegroom would hardly be likely to tell his future brother-in-law that he was suffering from V.D.; people are usually somewhat reticent about these matters.

Paroxysmal Auricular Fibrillation

Q.—*A woman aged 59 has in the past 18 months had attacks of auricular fibrillation. The arrhythmia averages much less than 24 hours' duration. One attack ended with unconsciousness. She looked ashen-grey and appeared to be about to die, but was lifted on to her bed, and soon became conscious with a regular pulse. She has always had a slow pulse, 60 or under. So far the attacks have begun on waking in the morning after her normal night's rest.*

A.—The diagnosis in this case appears to be paroxysmal auricular fibrillation. If the attacks are coming frequently, it would be worth while to try quinidine sulphate gr. 3 or 4 three or four times a day, according to the effect and the tolerance of the patient.

Dispensing Schedule 4 Drugs

Q.—*I was recently informed that it was illegal for me to supply patients with phenobarbitone tablets or any other drugs in "Schedule 4," except in such quantities as might be requisite in emergency for a single dose. I find this statement difficult to believe.*

A.—There are no special limitations on the supply by medical practitioners to their patients of substances in the Fourth Schedule to the Poisons Rules. Such substances are also in the First Schedule to the Poisons Rules, and so far as the supply in question is concerned are subject only to the requirements for First Schedule substances which relate to labels, prescription book entries, and containers, and which are presumably already being observed by the questioner.

Meniere's Disease

Q.—*Can you suggest any treatment which will give some hope to a well-marked case of Ménière's disease in a man of 64? He dates the tinnitus and partial deafness 30 years back, when he was knocked out by a shell in Gallipoli. Attacks of vertigo began to appear about three years ago, and are now the most distressing symptoms. They are accompanied by double vision, entire loss of balance, and occasional vomiting. Attacks last from a few minutes to several hours.*

A.—If this is a true case of Ménière's disease, and the usual medical treatment of restricted fluids and salt-free diet, with sedatives, has failed to relieve, the best treatment is to destroy the affected labyrinth by alcohol injection.

Anti-gas Ointment No. 2

Q.—*What is the formula of anti-gas ointment No. 2? Can it be used for any purpose other than giving first-aid treatment to gas-burn cases?*

A.—The composition of anti-gas ointment No. 2, as disclosed by the Ministry of Home Security, is an active principle, chloramine-T, in a base of vanishing cream. This is a specific ointment designed for a special purpose (i.e., the treatment of burns of the skin by liquid mustard gas), and it is considered unwise to use it indiscriminately for other purposes. Experiments have been carried out in the Army with this ointment as a treatment for tinea cruris, but with little success, and the Ministry of Home Security has always discouraged its use among civilians for purposes other than anti-gas.

Heartburn and Cholecystitis

Q.—*A woman aged 45 suffers from chronic cholecystitis and severe and intractable heartburn. A fractional test meal reveals a marked hypochlorhydria, and the heartburn does not respond to acids or alkalis. How can the heartburn be explained and what should be the treatment?*

A.—It is assumed that other causes of burning pain near the ensiform cartilage have been excluded—hiatus hernia or peptic ulcer of the oesophagus, the latter usually associated with congenitally short oesophagus; and cardiac disorders, possibly psychogenic in origin. Two theories are held as to the causation of heartburn—the first that it is due to regurgitation of irritating material from the stomach into the oesophagus; the second that it is due to reflex spasm of the lower oesophagus. Reflex spasm is the most likely cause in chronic cholecystitis. For the dyspepsia of cholecystitis the usual remedies are olive oil before meals, and effervescent sodium phosphate 4 to 5 grammes before meals. If these remedies fail antispasmodics should be tried, such as a barbiturate plus belladonna, atropine, or trasentin. If there is any suspicion of a climacteric element in the symptoms, treatment with natural oestrogen or one of its analogues should be tried. Cholecystectomy has presumably been considered, though it must be confessed there is little assurance that it will relieve a reflex disturbance of this kind.

Diminished Vaginal Secretion after Pregnancy

Q.—*A young married woman with one child of 6 months is complaining of complete absence of vaginal secretion during intercourse. This has occurred only since she was about three months pregnant, and previous to this there was a copious secretion. She has normal sexual impulses. There is no obvious abnormality of vulva or vagina.*

A.—There is not likely to be any local abnormality in this case. The secretion liberated during coitus comes mainly from Bartholin's gland and is discharged as the result of sexual excitement. The amount secreted in any one individual is to a large extent dependent on the intensity of sex desire present at the time, and the diminished secretion in this case should be regarded as indicative of decreased sex urge—and that in spite of the alleged normal impulses. Diminished sex desire in woman during pregnancy and for a period after delivery, if not the rule, is extremely common. The very fact that the fundamental object of coitus is achieved, the awakening of mother love, the extra work and anxiety associated with looking after the child, etc., all play their part in effecting this change. But it is usually only a temporary one, and the partners of this marriage should be reassured accordingly. It is the husband who by patience allied with skilled love-play can do most to arouse the wife's sex-desire again to the full. Until he achieves that there is no reason why they should not use an artificial lubricant.

Psoriasis

Q.—*An officer has suffered from psoriasis for two years. The parts affected are the scalp, thighs, and glans. He has had four courses of psoriasis filtrate vaccine and several different local applications. There have been many relapses. The present treatment consists of local applications with liq. picis carbonis incorporated in them, and vitamin E orally. What is the latest treatment?*

A.—If by psoriasis the questioner believes he is dealing with a specific disease entity it must be said that the cause is unknown and no recent work has discovered any specific cure or "latest treatment." If, as seems probable, psoriasis is a constitutional reaction of the rheumatic diathesis, then success in treatment is more likely to follow consideration of climatic factors, of toxaemia (metabolic or infective), of endocrine and psychological influences. There is no indication for vitamin therapy in the absence of other signs of deficiency. One cannot talk of cure of a constitutional reaction. The same reaction has different causes at different times. What is necessary is an understanding of the nature of the problem—by the patient as much as by the physician—and control of the tendency to react will follow understanding.

Snake Venom for Epilepsy

Q.—*I have recently heard of a series of cases of idiopathic epilepsy treated with snake venom. (1) What is the rationale of this treatment? (2) Has its efficacy been satisfactorily proved? (3) Are there any dangers in its use? (4) Has it any advantages over the barbiturates?*

A.—The treatment of epilepsy with snake venom originated in South Africa out of the belief that accidental snake-bite sometimes had a good effect on various chronic disorders. Rattlesnake venom is used. Its efficacy has not been proved. In a few cases the writer has used it at the request of patients, but without benefit. Focal reactions at the site of injection are not uncommon, but there seems no danger in giving recognized doses. Not only has it no advantage over the barbiturates, but it appears to be ineffective.

Treatment of Bronchial Asthma

Q.—*Hypodermic injections of 100 mg. pethidine are advised in the symptomatic treatment of an acute attack of bronchial asthma. Are there any contraindications to this treatment in acute cases? Are frequent light applications of the cautery to the "asthmogenic area" of the nasal septum, and intratracheal injections of lipiodol of any value?*

A.—Pethidine hydrochloride "has a morphine-like action, though it is more antispasmodic and less narcotic than the opium alkaloid." Both these actions are made use of in the treatment of an acute asthmatic attack—the antispasmodic and analgesic. But with the relief of the spasm and the abolition of the cough reflex and the lowered ciliary action there is a tendency for the sputum to accumulate in the lungs and for the patient to become blue and drown in his own sputum. Otherwise its toxic effects are uncommon and not serious, but there is some risk of addiction. It should be used only when adrenaline has failed.

Nasal cauterization has been advocated for many years, and at times it appears to act miraculously for a short time, but usually recurrent applications are necessary, with less and less effect.

Scibold in 1940 reported a high increase of the mortality rate of asthmatics in a 12-month period following the therapeutic administration of iodized oil.

Varicose Veins in the Elderly

Q.—Is age any bar to the division and ligature of a varicose internal saphenous vein associated with eczema of the leg in an otherwise healthy woman of 73, and do you advise very early sitting up after the operation? There has not been any tendency to phlebitis, and there is only slight swelling of the leg above the ankle.

A.—Ligature of the saphenous may be carried out, provided the patient is not obese and is young for her age of 73. The patient should be ambulatory from the day of the operation; this is more important even in older patients because of the risk of femoral thrombosis. If there is excessive phlebitis in the superficial veins following ligature and injections, it can easily be controlled, without interrupting the ambulatory nature of the treatment, by elastoplast and padding, as in the treatment of spontaneous superficial phlebitis.

Iodochlorhydroxyquinoline

Q.—A patient aged 45 is used to taking iodochlorhydroxyquinoline for its good laxative effect. Is its long-continued use likely to cause any intestinal or other malignancy, and would the iodine content upset thyroid or other endocrine mechanism?

A.—This substance is commonly prescribed as a treatment for amoebic dysentery, and it has no generally recognized action as a laxative. Its laxative action in this patient is probably peculiar to him. Its long-continued use is unlikely to produce any harmful effect. The tablets contain 0.25 g., and three tablets would be 0.75 g. This contains much less iodine than is present in 1 g. potassium iodide, which is administered three times daily for four weeks at a time in the treatment of syphilis without harmful effect.

A Tourniquet

Q.—The G.P. frequently has to give intravenous injections, and usually there is no assistant present. A small tourniquet which could be quickly released by the patient when penetration of a vein has taken place would be an advantage. The usual type takes a long time to release, and sometimes the limb is shaken in the process. Is such a tourniquet available?

A.—Most pathologists find it adequate to use a length of soft rubber tubing, size 2, internal diameter 4 mm. This is wound once round the arm and the free end looped underneath. It is easily released by pulling on the free end of the loop. Even less disturbance is caused by using a sphygmomanometer and releasing the pressure in the cuff by turning the milled screw when the vein is entered. No tourniquet superior to this is known to the writer.

INCOME TAX

Purchase of Practice

"X. A. X." was from January, 1943, to June 30, 1945, a partner in a firm of 6 partners, but as from the latter date he took over, as a "sole" practice, a practice until then worked by two partners. On what basis should he calculate his income for the year ending April, 1946?

*** (*a*) As regards the three months to June 30, 1945, his taxable income will be the amount of his share of the firm's assessment for 1945-6—e.g., 1/4 of 1/6 of the gross amount assessed. (*b*) As regards the nine months to April, 1946, the practice should be treated as a "new" one, and the gross income and expenses taken on the basis of the current year.

It may be convenient to take out a nine-months account to the end of March, but if preferred any other date can be taken—e.g., if a year's account to June 30, 1940, be the first account for the new practice, the income for the nine months to April, 1946, can be calculated at 3/4 of that for the full year. "X. A. X." cannot claim the cost of two new cars as a renewal of his present car; the second or additional car represents an investment of further capital in the practice. But of course the depreciation allowance can be claimed for both cars.

Appointment: Car Expenses

W. H. has been receiving an allowance of £60 a year for the use of his car. He contemplates selling his present car and buying a more modern one—at a cost of, say, £150 on the exchange. Can a deduction be claimed for such an expense?

*** Fundamentally the question is one of fact—i.e., Does the allowance of £60 a year cover the expense which W. H. "necessarily" incurs?—and in considering that question it is to be presumed that it would have to be looked at over a period of years. Assuming that replacement of the car has become *necessary*, W. H. would seem to have good ground for claiming that the facts have proved that the £60 was insufficient, and that some annual deduction should be made from his salary for income-tax purposes. But it may be urged on the other side that he should first approach the employing authority for a further allowance, or alternatively for a supporting statement that the £60 allowance is insufficient in view of present costs.

Cash Basis

A. B. has bought a share in a practice from an outgoing partner who did specialist work. The firm has been assessed on the cash basis, and A. B. is buying a share of the debts outstanding, excluding a sum of £1,000 due to the firm for the, now discontinued, specialist work. This involves A. B. in paying tax on his share of the £1,000, although, so far as he is personally concerned, such receipts will not represent income. Is there any way of avoiding the inequity?

*** If the new firm is to maintain the cash basis of calculating their income-tax liability *all* professional receipts must be brought into the computation. There seem to be only two alternatives open to A. B.: (*a*) to persuade his partners to drop the cash basis—thereby putting the £1,000 out of the picture—and adopt the earnings basis for this and future years, or (*b*) to represent to them that in effect he, A. B., is being called upon to pay tax on sums which are not *his* income in order to preserve for the firm as a whole the advantages of the cash basis, and that the other partners might share the burden to some extent. It is evident that A. B. is in an unfortunate position.

Domestic Help

K. C. inquires whether a deduction can be claimed for the cost of a nurse whose employment to look after a baby is necessitated by the fact that his wife is working as an anaesthetist.

*** No. The point was taken on appeal to the High Court some years ago and decided against the taxpayer.

Starting Practice: Expenses

W. D. started practice in July, 1944. Can he claim as expenses (*a*) cost of removal of furniture, etc., and (*b*) cost of a nurse-housekeeper necessitated by family illness and the circumstances of removal?

*** (*a*) No. Such expenses are incurred not in carrying on the practice but in order to be in a position to carry it on. (*b*) No. The expense is of a private nature.

Deduction for Ownership of Premises

J. R. owns his house, subject to a ground rent of £10 a year. What can he deduct for "rent" and repairs?

*** *Rent.*—J. R. can deduct a proportion of the "net annual value" as assessed under Schedule A for income-tax purposes, but not the amount of the ground rent; the proportion being the ratio of the professional to the private use of the property. *Repairs.*—If the total expenditure can be divided as between the professional and private portions of the house, that part applicable to the professional portion can be deducted. If the expenditure cannot be so divided, probably a division on the same basis as for "rent" will be accepted.

LETTERS, NOTES, ETC.

Conditions in Iraq

The Baghdad British Community Council (Post Office Box No. 2, Baghdad, Iraq) sends the following note: In the past men and women have come to posts in Iraq with little knowledge of conditions in the country. This has caused dissatisfaction, which the Baghdad British Community Council is anxious to minimize. The Council has therefore prepared *Notes for the Guidance of those considering Employment in Iraq*, which it hopes may prove of value and reach as many as possible of those concerned. In order that it may do so the Council would be grateful if associations, institutes, societies, and other bodies would inform their members of the existence of this pamphlet and of whence it may be obtained. The price is 150 fils or 3s.

The Future of Populations

Dr. B. DUNLOP (Binfield, Berks) writes: Why would it be disastrous (Aug. 25, p. 258) to have, through low fertility, deaths exceeding births until our numbers in Great Britain were reduced to about 40,000,000? I believe those to be right who agree with the late Prof. Wicksell, the Swedish economist, that there is not a country in Europe and Asia which would fail economically to benefit greatly by halving its population. What I consider dangerous is that married couples in our poorest sections still have an average of more than two children per family.

Drug Treatment of Cancer

Dr. G. R. USMAR (Boston, Lincs) writes: With reference to the most interesting answer under this heading (Aug. 25, p. 271) on Oct. 17, 1944, I saw a patient suffering from a large fungating cancer of the right breast; operative treatment and radium, etc., were refused. She was given stilboestrol 1 mg. t.d.s. Within one week bleeding ceased. The district nurse noted that skin was beginning to appear around the edges. By January the skin had been completely reformed. The general health of the patient was greatly improved. This was probably due to the external appearance of the cancer, for she did not gain weight, though her appetite had vastly improved. In May, 1945, she began to deteriorate in health, and in June, 1945, she died of cachexia due to secondaries in both lungs and secondaries in thoracic vertebrae. However, this drug treatment was most beneficial from the patient's point of view, and she was most happy in her last year. Of course I made a point of informing the relatives of the ultimate outcome (for they were inclined to hail stilboestrol as a miracle).

Constriction Ring

Lieut.-Col. F. R. W. K. ALLEN writes from the Indian Military Hospital, Poona: It appears from a case reported in the *American Journal of Obstetrics and Gynecology*, November, 1943, that adrenaline may sometimes relax a constriction ring of the uterus. Deep chloroform or ether anaesthesia may have a similar effect, but the rural practitioner may only have chloroform at his disposal. Vinesthene is alleged to have much less relaxing power on the uterus than chloroform. The pharmacologists tell us that a combination of adrenaline by injection and choloroform by inhalation is liable to induce auricular fibrillation. A number of textbooks on obstetrics recommend both injections of adrenaline and deep chloroform anaesthesia in the treatment of constriction-ring dystocia where delivery has become imperative. Is there really danger in a combination of adrenaline injections and deep chloroform anaesthesia in such a case? Could amphetamine (methedrine) be substituted for adrenaline to safeguard the parturient from the danger of auricular fibrillation without a reduction in the relaxation of the constriction ring? I have only once felt a constriction ring, and that was of a mild degree. After a forceps delivery I was waiting for the birth of the placenta. There was no haemorrhage, but we wished to return the patient to her bed and have the delivery table ready for the next case. I tried gentle expression without avail, so I passed my hand into the uterus and found a constriction ring about half-way between the external "os" and the fundus. The placenta was lying free above the ring and there was no difficulty in drawing it out. The parturient was not injured by either of my operations.

Ptyalism in Pregnancy

Dr. W. H. NELSON (Perth, Western Australia) writes: In the *Journal* of April 14 (p. 543) there was a query about ptyalism in pregnancy. Many years ago I attended a pregnant woman suffering from vomiting of an intractable nature and profuse ptyalism, so much so that her face was swollen and the skin in the mouth region was raw with the irritation of the spittle. She had already lost three pregnancies on account of this condition. I tried a few standard remedies—mist. bis. co., chloretone in capsule, etc.—without success. Then I gave her 20 drops of 25% benzyl benzoate in 90% alcohol, taken in water every two hours for three doses, and then every four hours. The effect was miraculous, and when I saw the patient the next day I did not recognize her, as the face was quite normal, only showing the burnt areas at the corners of the mouth. The ptyalism vanished with the first dose, and the vomiting also ceased. She had to continue taking the drug three times a day throughout the carrying period, as the condition recurred as soon as she stopped it. In the end she had a normal son, and everyone was happy.

Nocturnal Cramp

Dr. SIMONDS GOODING (Grays) writes: With reference to your correspondent's inquiry (Aug. 18, p. 240) about the prevention of nocturnal cramp, it may be of interest to him to know that following an attack of acute gluteal fibrositis I personally suffered with very acute attacks of nocturnal cramp in the calf muscles of the right leg. To remain in bed during an attack was quite impossible owing to the severity of the pain. Various preparations of morphine and codeine, nembutal, allonal, amytal, antipyrine, etc., all proved quite ineffectual. On the advice of my colleague, Mr. L. Casin, F.R.C.S., I finally tried prostigmin, taking half a 15-mg. tablet each night on retiring to bed. I derived considerable relief from this drug, which, though probably not a cure, certainly relieved the symptoms and made the nights more bearable.

Venereology

Lieut.-Col. HENRY RICHARDS writes: In Army medical jargon a venereologist is an officer with a special knowledge of the diagnosis and treatment of venereal diseases. I have been hoping that some classical scholar would register an authoritative protest against the use of the word in this sense. The persistence of the term would be a regrettable addition to medical nomenclature. In the first place the word is a hybrid, derived from Latin and Greek. Secondly, the word cannot possibly have the meaning now fastened to it. Venereologist can only mean a person with a knowledge of venery. An expert practitioner of the arts of love is not necessarily a specialist in the care of venereal diseases.

An Unusual Cause of Intestinal Obstruction in a Newborn Baby

Dr. H. R. UNWIN (Yeovil) writes: The following unusual case occurred recently in my practice. A baby boy 4 days old had not passed any meconium since birth and was starting to vomit. A examination of the rectum by the little finger showed that it was normal as far as could be reached, and no meconium was found on the examining finger. Gastric peristalsis was visible after feeds, but it was only on the fourth day that vomiting became a feature of the case. A laparotomy was performed and the following state of affairs was found. Torsion of the caecal end of the ileum had taken place through three complete turns. This had been made possible by a deficiency in the mesentery. Aseptic gangrene of the terminal 12 inches of the ileum had resulted, with section of the ileum at the upper limit of the gangrene, the ends of the divided intestine being completely occluded. The ileum above the section was very distended for about 6 inches. The treatment adopted was resection of the gangrenous and distended ileum with an end-to-side ileo-caecostomy. The baby lived for two days after the operation and then died with symptoms of unrelieved obstruction. No post-mortem examination was performed. It is probable that a paralytic ileus developed.

Anatomical Nomenclature

Mr. A. HOLLMAN writes from University College Hospital: Surely it is time that surgeons in general, and the authors of surgical anatomy books in particular, made an attempt to use the B.R. nomenclature. At present the student learns his anatomy in terms of the B.R. and then, on entering hospital, he has the further burden of learning obsolete synonyms. If this state of affairs were rectified it would materially ease the student's task of learning what is, anyway, an uninspiring subject.

Sleep-walking

Dr. M. N. PAI writes: Some suggestions have appeared in the *Journal* on the treatment of sleep-walking. The causes of sleep-walking may be classified as follows: (1) Psychogenic or partial sleep due to (*a*) anxiety states, or (*b*) genuine dissociation—e.g. hysteria. When not sleep-walking a patient often talks or shouts in his sleep. Sometimes he may open the door and walk a long distance before waking up. (2) Post-epileptic: (*a*) following a nocturnal fit, or (*b*) as an epileptic equivalent (instead of a fit). Here the patient usually gets up from his bed and almost immediately returns to it, or gets into another one if one is available. He seldom walks more than a few yards. A positive E.E.G. may confirm the diagnosis, but a negative one does not exclude epilepsy. (3) Hysterical malingering. Here, apart from walking, the patient carries out very complicated actions requiring careful thought and previous planning. There is always an immediate gain. Careful observation at night, hypnosis, or narco-analysis may help in the diagnosis. (4) Post-infective following meningitis, encephalitis lethargica, and chronic cerebral abscess. Here the patient may wander aimlessly in an apparently confused state. Other signs and symptoms help in the diagnosis. Treatment: (1 *a*) relieve the anxiety or give large doses of sedative at night; (1 *b*) psychotherapy and suggestion—e.g. hypnosis. (2) Epanutin at bedtime. 3 and 4 are difficult to treat.

Hospitals Day, Oct. 2

The Secretary of the London Hospitals Street Collections Central Committee writes: May I call attention to the first street collection in aid of London's hospitals since the coming of peace? Hospitals Day will be on Tuesday, Oct. 2. Collectors are urgently needed, and volunteers should offer their services to their nearest voluntary hospital or to Lord Luke, Chairman, Hospitals Day, 36, Kingsway, W.C.2.

Corrections

In the question and answer headed "Profuse Periods in a Young Girl," published in the *Journal* of Sept. 15, p. 374, the dosage of thyroid was given in error as 1 gramme daily. This should have read 1 grain.

In the question and answer on "Oil-in-water and Water-in-oil Emulsions" (Sept. 15, p. 374), it was said "the bivalent alkaline earths and trivalent gases invariably give rise to water-in-oil emulsions." This should have read, "trivalent bases."

In a question and answer discussing the use of tryparsamide and G.P.I. (Sept. 15, p. 374) it was said that bismuth and arsenic may be given "concurrently or alternatively." This should have read "concurrently or alternately."